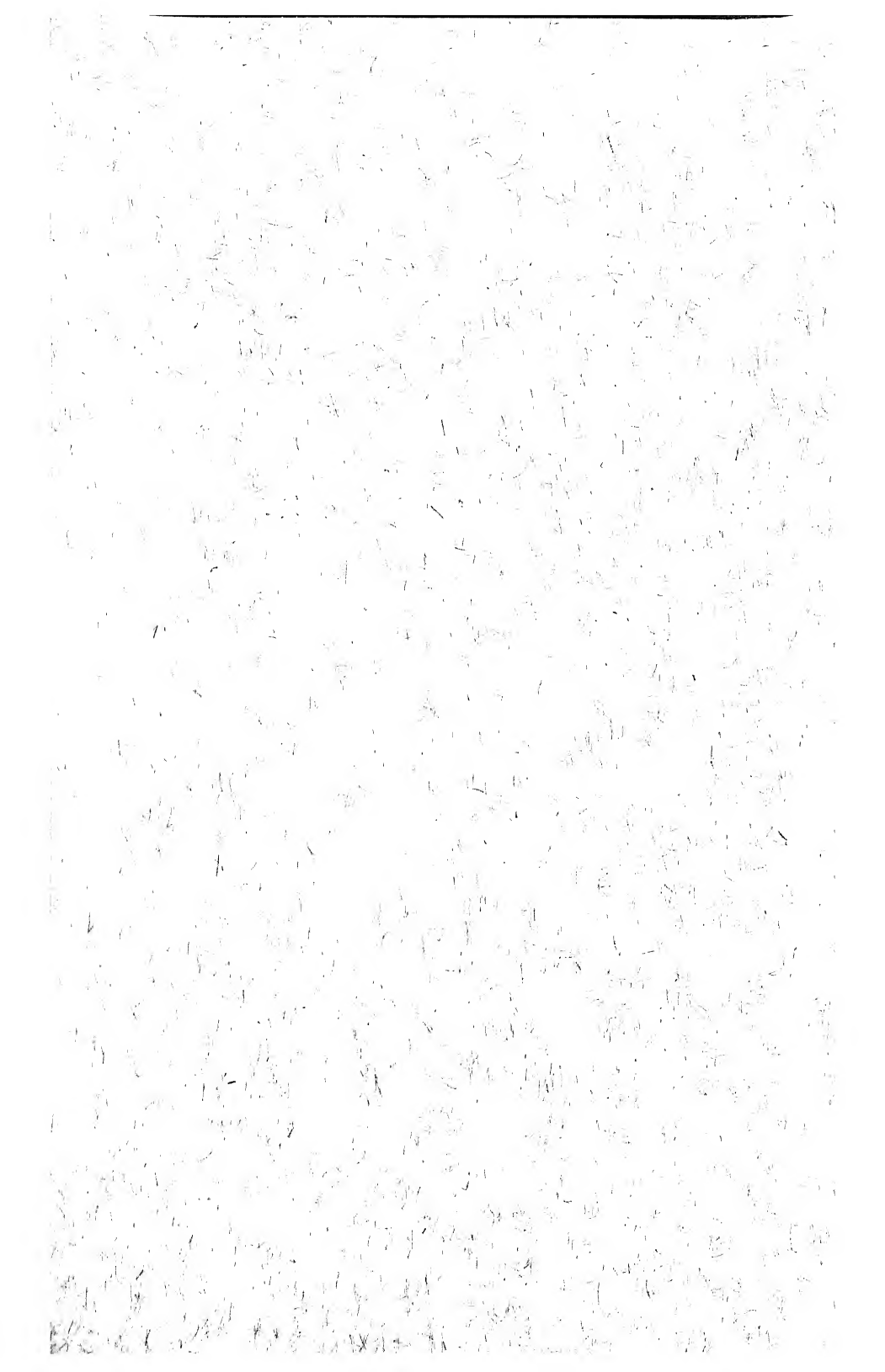


PROCEEDINGS
OF THE
ARISTOTELIAN SOCIETY
FOR THE
SYSTEMATIC STUDY OF
PHILOSOPHY

VOLUME 3

1895 - 1896





PROCEEDINGS

OF THE

ARISTOTELIAN SOCIETY

FOR THE

SYSTEMATIC STUDY OF PHILOSOPHY.

Vol. 3.—No. 1.

CONTENTS.

	PAGE
Presidential Address—On an Essential Distinction in Theories of Experience—B. Bosanquet, M.A., LL.D.	1
The Logical Meaning of Proper Names—E. C. Benecke	12
The Rationality of Hedonism—E. E. C. Jones	29
Symposium—The Freedom of the Will—	
I. W. L. Gildea, D.D.	45
II. W. H. Fairbrother, M.A.	51
III. H. Sturt	57
Relative Suggestion—G. F. Stout, M.A.	61
Lord Bacon's Doctrine of Forms—R. J. Ryle, M.A., M.D.	89
Hypothesis—J. H. Muirhead, M.A.	99
Symposium—Is the Knowledge of Space <i>a priori</i> ?—	
I. H. W. Carr	119
II. J. H. Muirhead, M.A.	123
III. G. F. Stout, M.A.	130
Symposium—Does Law in Nature pre-suppose Prevision?—	
I. A. Boutwood	133
II. C. C. J. Webb, M.A.	136
III. E. C. Benecke	139
Symposium—Has the Heritability or Non-heritability of Acquired Characteristics any direct bearing on Ethical Theory?—	
I. D. G. Ritchie, M.A.	144
II. R. E. Mitcheson, M.A.	148
III. R. J. Ryle, M.A., M.D.	150
Reid and the Philosophy of Common Sense—Arthur Boutwood	154

Reprinted with the permission of The Aristotelian Society, London

JOHNSON REPRINT CORPORATION

111 Fifth Avenue

New York 3, New York

JOHNSON REPRINT COMPANY LIMITED

Berkeley Square House

London, W. 1

106
A71P
V.3
1895/
1896

AL First reprinting, 1963, Johnson Reprint Corporation

PAPERS READ BEFORE THE SOCIETY, 1894-5.

PRESIDENTIAL ADDRESS.—ON AN ESSENTIAL DISTINCTION IN THEORIES OF EXPERIENCE.

(For the Sixteenth Session (1894-1895) of the Aristotelian Society.)

By B. BOSANQUET, M.A., LL.D.; President.

BEING called upon for the first time to deliver a Presidential address to a Society which has for its object the systematic study of philosophy, I think it right to explain, to the best of my judgment, how at the present day the student of systematic philosophy must conceive his task. In this *attempt*, at all events, I am sure that I shall carry with me the sympathy of my predecessor, to whom alone, perhaps, it is owing that the Aristotelian Society has never completely laid aside the idea of philosophy as a whole. The views which he has so long maintained involving, as I understand them, the necessity of absolute reconstruction through analysis as the only philosophical treatment of experience, are coming to be recognised as the witness of a truth which victorious sensationalism no less than a *priorism* forgot, and as containing a part—it is not for me to pronounce what part—of the foundations on which the English philosophy of our hopes must one day be erected. More especially his persevering antagonism to the traditional doctrine of the substantial soul has powerfully aided to loosen our rooted prejudice and to introduce the English thinker to the habit of a radical analysis. This much is certainly his due; what more may be so lies in the future, to which we all appeal.

The distinction between theories of Experience which I am about to discuss may be approached as follows. Nothing is more remarkable than the great extent to which different philosophical methods share the same outward characteristics and cover the same ground. In great part, it might be maintained, all philosophies coincide, and the disciple of Locke or Hume is nearer to the Kantian or Hegelian than either of them to the man in the street. In philosophy, as I suppose in other sciences, vexed questions attach themselves to the interpretation of facts and processes the reality of which is not

denied by any of those who have given attention to the subject. And the divergence of interpretations does not become unmistakable until consequences have to be drawn which reach far beyond the matters originally in question. And at such a crisis it may happen that a tendency to which both movements had appeared equally antagonistic, may reappear in a new form within one of them.

A temporary coincidence of the kind just indicated has recently taken place, to the best of my belief, between two theories of Experience essentially antagonistic, which I will describe, preferring expressiveness to elegance, as Combinational and Transformational respectively. And now that they are again diverging, as their inherent natures make it inevitable that they should diverge, two remarkable phenomena attend their separation. One of these is that the doctrines which have been roughly classed as theories of knowledge *a priori* or springing exclusively from the intellect in opposition to sense, are seen to have a certain root of kinship with the Transformational standpoint, which, in the first flush of scientific Idealism, tended to make common cause against them with their hereditary antagonist, the Combinational theories. And the other remarkable phenomenon which accompanies the plain divergence now under consideration, is this — and here I unavoidably touch upon recent and burning controversy — that with this parting of the ways there comes a re-sifting of the pilgrims. Some will cross over from each company to the other, and just because the antithesis has taken a new and profounder form, the division will not be the same as in the older antagonism, but it will be more just. Those, for example, who attach themselves by preference to the given in any form whatever, might on the old lines be found either in the sensationalist or as easily in the *a priori* camp. But now that the antagonism, in one of the recurrent phases which characterise the history of philosophy, has been wrought up to the point from which such thinkers as Plato and Spinoza, not to speak of Hegel, took their departure, the line is deeper and different. It runs not between the given of the intellect and the given of sense-experience, but between the acceptance of the given as ultimate in any form, whether perceptual or intellectual, and the resolution to follow the argument, the clue of criticism, "like the wind, wherever it may lead."

I will illustrate my meaning in simple matter, in which the two principles of which I speak are not very easily distinguished, and with a little goodwill may be made of equal practical service. I mean by being of equal practical service that they both may appear to organise adequately a very limited philosophical field.

When Stuart Mill broke into the old botanical garden of British formal Logic, and showed that classification must be referred back to

nature, that Deduction and Induction were both in some sense interpretative processes and not mere re-arrangement of labels or enumeration of examples, and that the only tests of truth were completeness and self-consistency, it certainly seemed that a new principle had dawned, and that the impact of Continental thought had been in some degree anticipated on English soil. It is true that the Idealist leaders of twenty years ago never accepted the compromise of Mill or Spencer, and unweariedly urged the fundamental inconsistencies of their position. But still it was possible to doubt whether the issue at stake was not rather a point or colour of view, covering for both parties much the same range of experience, than the entrance or non-entrance on a line of progress leading definitely to a new and wider territory. It was necessary to show more positively what regions of reality were forfeited by the tacit reservations inherent in empirical views, before the English mind could be stirred to believe that the difference deserved serious attention. But owing to a great variety of influences, which have attended the growing participation of Great Britain in European thought and culture and in the study of antiquity, this definite demonstration, most plainly enunciated by a single writer of genius, has found widespread sympathy among philosophical students, and a new era appears to be before us; and, looking back from this time, we can trace in the simple theory of Inference the distinction to which I am calling attention.

From the standpoint of systematic philosophy Mill's theory of inference is on the same general ground with the formal Logic which he combated. Both proceed by the combination or connection of certain conceptions, perceptions, or sensations, from which connections and combinations certain others may be inferred, the terms dealt with not being modified or transformed by the process in which their connection has become plain. "All B is C, A is B, therefore A is C," the type of inference according to formal Logic, leaves A and C standing, for all we are told, as if they had gone through nothing, no modification, no restatement, no re-organisation, by being explained as elements in a system which has its centre of identity in B. So it is with Mill's Induction. A heap of "circumstances," like the letters of the alphabet, represent Nature. You shuffle them about, and those which persist in adhering together are causally connected. In spite of the correct description of the well known results of actual induction in the way of vast theoretical structures in which sense-perception as such plays a small part and sensation none at all, there is no recognition of the operation of identity within the material of sense, and therefore no fair encounter with the questions "Is our result still sensation? If not, has it more or less reality than

sensation, and by what right have we transformed it?" Any philosophy which does not observe that in the simplest inference it transforms its data, or, admitting that it transforms them, gives no account of their relation, when so transformed, to the reality which they previously possessed, may be called a combinational theory of experience whether its starting point is the abstraction of sense or the abstractions of feeling, will, or intellect. Natural science, and the popular philosophy attached to natural science, have strained the combinational theory in its sensational form to such a point that even to a commonsense mind it will no longer work, and the obvious departure of scientific truth from given fact is one of the startling phenomena which is driving philosophy once more to hold a language cognate with that of Plato.

For when the simplest inference is analysed with vital truth, it becomes evident that the original terms are not left standing, assuming that genuine inference and not mere verbal transition has taken place. They have disappeared, and something new, though bearing a definite relation to them, has grown up in their room. The case with which everyday experience familiarises us is that of visual perception. Between two or more conflicting interpretations of the shapes in a mountain landscape it is possible to debate for a considerable time, adducing arguments drawn not merely from additional visible detail but from previous knowledge or from general probability. But supposing that one of the spectators changes his opinion in consequence of such an argument, that is to say, forms a conscious inference respecting the true shapes before his eyes, then, as we all know, the prospect changes before him, and he sees it as something quite different from what he saw before. The old sensuous stimulus, we must suppose, still persists, but is so modified by the new elements which are reacting upon it that the total result is something completely transformed from what it was, though we do not doubt that the real nature of the sensuous stimulus is more fully expressed in the completer mediate perception—the result of conscious inference—than it was in the less complete or relatively immediate perception. And it is well worth remarking that recent Psychology* repudiates the very existence, in a mature human being, of the pure or immediate sensation, while still inexplicably charging it as an absurdity upon the philosopher that he refuses to recognise this non-existent sensation, as such, to be "the stable rock, the *terminus a quo* and *ad quem* of our thought."

But granting that the existence of the pure sensation were established, or taking as a starting point the class of judgments which

* James, *Principles of Psychology*. vol. i, pp. 7 and 11.

embody utterances of sense-perception, we are forced to ask ourselves at what point we can arrest the necessity which forces us to transform them. Can it be arrested at a point which will leave standing any cluster or grouping of sensuous elements, any thing in space or event in time, as ultimate and real? And the common analysis of logic shows us at once that it is not so; there is no form of sensuous experience that will not under analysis reveal inconsistency with itself, and therefore there is none that can be accepted as ultimately real; though this does not imply that anything of what it brings can be omitted in the whole of reality.

Now this same necessity reveals itself in every given form or element of our experience; and as I am only illustrating and not demonstrating, I need not further explain what is indeed known to us as the principle of the greatest philosophers, Plato, Spinoza, Hegel. Its essence I take to be that short of a whole of experience, organised so as to be free from contradiction, there is nothing completely real; but that all forms of experience are images or symbols, data or assumptions, which have their truly tenable position only as absorbed in the whole, and by the grade of their shortcoming as compared with the character demanded by that position are assigned their degrees of reality and truth.

If we contrast this view with one into which it has often degenerated and with which it has undoubtedly a certain affinity, we shall find that in such degeneration it has really made a compromise with its opposite. The belief in *a priori* truth, as an inherent possession of man's intellectual nature, bore witness that there was more in Reality than a combination of sensuous perceptions. But in so far as the principles relied on were isolated abstractions—assumptions, as Plato says, of which no critical account was given and no connection established with the nature of experience as a whole, the doctrine which relied on them was itself what I have ventured to call a combinational doctrine, building up a mosaic of parts as hard and repellent as those supposed by sensationalism itself. And indeed it might probably be shown from history that the prevalence of doctrines which could fairly be called doctrines of knowledge *a priori* as given by the intellect, has always characterised the trough of the wave in the philosophical ocean, and has been predominantly ethical or theological and not scientific in its nature. The one apparent exception would be the great name of Kant, and it might be shown perhaps how in his system the formula in question was only floating as a half melted fragment on the mass which was being fused into unity. The Stoic and Schoolman, it might be suggested, are to Plato and Aristotle, as Wolff to Descartes, and as Hamilton or Coleridge to Kant. The attempt in all these cases has been to utilise uncritically

or dogmatically what had been established in critical and organic connection by thinkers of real genius.

Where, then, is the essential distinction between a doctrine of knowledge *a priori*, and what I have ventured to designate as a transformational theory of experiences? In certain properties the two bear a strong resemblance. There is the same criticism of sense-perception; the same willingness to be driven by intellectual necessity; the same tendency to connect, in one way or another, the attributes of truth and reality and importance. The characteristic difference however is fundamental. As starting from a given point in the intellect opposed to feeling and sensuous experience, and as accepting no reciprocal criticism founded upon those experiences, the *a priorist* is ultimately on the same ground with the sensationalist, who is indeed, in his own way, as Lotze has pointed out, a votary of the psychically innate—why not call it at once the *a priori*? Both are governed by the distinction of within and without, self and the world, form and matter, intellect and data of sensation, and it is hard to understand on what ground, other than some personal preference or feeling of relative importance, the one becomes a sensationalist and the other an *a priori* thinker.

A transformational theory is radically different from both of these views. No form of experience is, so to speak, sacred to it. Sense-perception is indeed at the mercy of its criticism, but so is the solid thing-like existence, and the abstract intellectual principle. The critical impulse itself is not regarded as the judgment passed by a thinking being on a world without, nor, reversing the attitude, is it the subjugation of the thinker under the load of substantive data which he is powerless to modify or reject; it is the necessity of experience itself in all its kinds and phases, the inconsistency of each not merely with others but with itself, which proclaims it to be a mere appearance, though holding a certain grade and value in Reality. The commonplace example of the logical judgment is simple and sufficient. No judgment ever embodies the whole truth, the full connection between subject and predicate which it proclaims itself to embody. It always contains both too much and too little. Something in the subject is irrelevant to the predicate, something relevant to the predicate is omitted in the subject. And more than this; discursive thought—the judgment—can never be the same as existence in the full sense which experience suggests. Existence should be self-contained, solid, given, individual; that is the character at which the series of facts in time appears, so to speak, to aim. And this character the judgment can never wholly possess; its essence is gone if the predication ceases to be an idea divorced from, while attached to, Reality.

This much seems to be incontestable, and so far the inadequacy of thought to existence is admitted. But when we look for a resting-place either in temporal fact or in the self with its self-feeling, we find that existence as a form of experience, though distinguishable on the whole from discursive thought, yet does not possess the solidity and individuality to which it aspires. Thus then the fact and the self are very largely ideal constructions; no one would for a moment suppose them to have atomic existence as separable from the whole of experience; nor have they even as they stand within experience a self-contained being which is anything in particular apart from the relations by which they are defined. Every experienced existence points beyond itself, and wholly fails to present a solid union of being and character. This is demonstrated by our critics, and I cannot understand how they fail to see that it annihilates the claim of existence to be reality.

And now we have, perhaps, the criterion for ascertaining the import of that re-arrangement of companies which belongs to the parting of the ways. And I will apply the criterion hypothetically, both because this is no occasion for detailed controversy, and because I am as yet honestly uncertain how in particular cases it should be applied. A mere reaction against intellectualism or Panlogism is so far from sinning against the principles of transformational theory, that it is actually in their favour; and it should be noted that the philosophical value of such a reaction would not depend on the truth of its historical estimate of the views against which it is directed. Many and many a so-called reaction is simply a movement from a narrower to a fuller interpretation whether of a system or of a principle. If then the criticism directed to-day against what I am tired of refusing to call Neo-Hegelianism, means, in its essence, that the forms of experience have not been accepted or interpreted with due liberality, and that the logical judgment has been treated too exclusively and too narrowly as the one revelation of reality and as adequate to existence, all this is a fair matter both of historical and of speculative discussion among those who accept the principle of absolute criticism. On this head I would observe that historically speaking, in such a discussion, individual philosophers must be separately treated, and I should deny the charge of Panlogism in principle both of Hegel and of Plato, not to speak of writers nearer home. And I would call attention to the admittedly ideal element which infects both feeling and all forms of existence, and would suggest that any exaggeration of the claims of the logical judgment, among minor writers, may in some degree be excused by the necessity of drawing attention to this neglected feature of our world and

showing that reality is at least not the mere negative of the ideal process, but must rather be looked at as its goal.

But if this criticism is founded on what may be called an Existentialist or Individualist basis, if, that is to say, existence and the self are to be taken as starting points adequate to Reality and therefore above criticism, and if the ideality and self-discrepancy of temporal existence is to be denied, and the value of all experience is to be estimated according to its capacity for appearing in existential form, then it would seem that the conception of reality has been truncated by assumptions no less unjustifiable than those of sensationalism, though of a somewhat higher kind. The relation of existence to reality, the nature of the universal as abstract or concrete, and the personality and existence of God, are all of them test points, the full treatment of which would probably be decisive of any philosopher's position with regard to the antithesis in question.

I will add, that where theoretical stress is laid on the demand for personal immortality there is usually ground for suspicion of uncriticised individualism.

But whatever may be the position of this thinker or that, the future seems not unhopeful. An accusation is sometimes made that the so-called Hegelian claims finality. Some twenty years ago I incline to think that the weaker brethren were, in fact, unable to see far ahead. If finality means impotence, a certain finality may then have prevailed. Carlyle, at an earlier date, had anticipated the euthanasia of philosophy. Such were the signs of the times. But it will be observed that if the view which I have taken is just, the paralysing influence lay in a want of faithfulness to the essential principle, or rather in a want of insight into its scope. A *modus vivendi* with the combinational theories was to all appearance being discovered. Natural science seemed to be pulling down its barns and building greater. Principles of Evolution were being trumpeted throughout the intellectual world, and seemed to have penetrated the fortress of Logic. The Utilitarian was ready to interpret his principle of happiness so as to include any ideal of life, and dogmatic materialism and the thing-in-itself were giving way before popular idealism. Under the circumstances it was not wholly easy to see that no adequate theory of reality—for example, of art or of religion—was implied in the general enlightenment, and that sensationalism, though it had made terms both with popular idealism and with some principles of Logic, still remained the tacit reservation of popular philosophy.

But there can be no question that finality is incompatible with the fundamental principles of a transformational theory, and to-day

it is hard to imagine how the two can be brought into connection. The philosophical world obviously feels itself to be approaching a new beginning. A century is not a long period in which to appreciate the nature of the problem bequeathed by a great speculative age. And in proportion as we come to appreciate it the vista opens before us. In a certain sense, no doubt, the track has been trodden before, though only by the greatest of our race. But for us, for the first time, free thought is combined with relatively adequate material. Nature and history are at least fairly recognised elements of our world, as they have never been before. The Greeks, it may be said, we are just beginning to know simply and straightforwardly. They were not known in this way to the men of Goethe's time, in spite of the extraordinary sympathy which Hegel in particular displayed for them, and *a fortiori* to no philosopher before. And about these very men themselves, the men of Goethe's time, we are still learners only. A very difficult foreign culture, especially of speculative content, is not assimilated in one or two generations, and till it is assimilated it is not understood. And yet with these men the modern period of wholly free thought, in fact, began. There were giants before them, but giants working in fetters. Thus the whole duration of free philosophical thought, such as to form a continuous thread, has not been considerable in the history of the world. It passes from Thales to Aristotle, and practically begins again with Goethe's generation. That generation stated the problems in detail, but we have all heard the saying of T. H. Green, "It must all be done over again." I have alluded to the new growth of natural science and history, but we are also confronted with a revolution in Psychology, of which, I take it, the initial shock was given in that same generation. Here alone there is plenty to think of; for the systematic philosopher will be wise if, according to the advice given to the too active constable, "he allows it to continue in its courses until he knows what they are."

My conclusion then is that so far from finding a resting place philosophy at the present crisis has more than ever to reveal itself as an effort and travail of the mind. It has to refuse to make terms with the given in any stage or form whatever, and has to reject every so-called combination of untransformed data if pressed upon it as a claimant for reality. Plainly, it will find itself, though without a one-sided preference for abstract intellect, on common ground with Plato in denying any considerable degree of reality to the perceptions and associations of every-day life. And it will therefore present to the world, as the great thinkers always have presented, a certain reversal of ordinary thought, and a standard of reality which approaches that of practical life more nearly than that

of commonplace theory, but may be sharply contrasted with both one and the other. It will not be in the strict sense mystical, but it will certainly be obnoxious in the popular judgment to the reproaches which are justly levelled at mysticism, and it will only escape from them to fall into the condemnation of an absolute destructive scepticism. The three great men whose minds I have taken as typical of true philosophic genius—Plato, Spinoza, Hegel—were the shrewdest, sternest, hardest-headed of scientific thinkers. And it is certain that any true follower of a transformational theory will in the degree permitted by his powers present the same destructive aspect to the eye of the votary of the given. What then is the secret of the union, in each of these cases, of an element akin to mysticism and often mistaken for superstition with a criticism to which nothing seems sacred? It is simply the old story, that anyone who holds two ideas together, not side by side, but truly organised and in unity, appears to the man in the street to be denying both of them. The criticism and the mysticism are not chance tendencies of individual intellects, but are the negative and positive aspect of the systematic grasp and effort which constitutes true philosophy. It is critical because it rests in no form nor element as ultimate; it is mystical to the common apprehension because in every form or element it grasps to some extent a reality greater than the appearance. To maintain, however humbly, such an attitude as this, is, in my belief, the duty and destiny of philosophy, and, if so, it is plain that we are only at the beginning, and also that every age of the world will bring new material to our conception of reality. The essential work of the philosopher will be in the future, as it has been in the past, to rise above all that is given; and the outlook is hopeful in this sense, that there is no fear of the task not proving sufficient for the philosopher, though there is considerable doubt whether most philosophers will prove sufficient for the task.

ON THE LOGICAL MEANING OF PROPER NAMES.

By E. C. BENECKE.

THE opinions of Logicians are strangely divided as to the value of that doctrine of the Connotation of Names which owes so much to the teaching of Mill. While Dr. Venn, for example, holds that the distinction which it introduces is "perhaps the most valuable distinction for purposes of intellectual profit to be found within the field of Common Logic,"* for Mr. Bradley, on the other hand, it is one

* Venn, *Empirical Logic*, p. 178.

of those superstitions which he set himself with so much vigour to expose and to demolish in his *Principles of Logic*. The terms "denotation" and "connotation," he tells us, "serve no useful purpose in logic. They are unnecessary and objectionable" (p. 156), and the indiscriminate use of the word "connotation" may even expose the user to the dreadful charge of being a "superior person" (*loc. cit.*). The best that the logician can do is to "dismiss for ever the term 'connotation,' and try to keep clear of the errors it beacons" (p. 157).

I do not intend to consider the general value of the theory in the present paper—though I may say in passing that, if one or other of these extreme views must be adopted, I should certainly be on the side of Dr. Venn, and that it would, in my opinion, be a great pity if logicians generally were to follow Mr. Bradley's advice. But there is no need for me to discuss this here; for, whatever we may think of the appropriateness of the terms as used by Mill, the distinction which they indicate appears (whether as Connotation and Denotation of Names or Terms, or as Intension, Comprehension, or Meaning and Extension of Terms or Ideas, or under some other designation) in every system of Logic (Mr. Bradley's not excepted), and must, therefore, always be of interest to the logician. I shall, therefore, make no excuse for saying a few words on one part of the theory—that dealing with the *logical meaning of proper names*—as to which there is a difference of opinion among logicians no less remarkable than that as to the general value of the theory.

As to the *denotation* or *extension* of the proper name there is, of course, generally no question. The difference arises only as to its *connotation* or *intension*.

Mill, as we all know, maintained with some emphasis and consistency that there is no such thing as the connotation of a proper name. Proper names are, according to him, "the only names of objects which connote nothing." * And this is, I believe, the common view. It is maintained, to name only a few eminent examples, by Whately,† by Professor Bain,‡ by Dr. Venn,§ by Dr. Keynes,|| and

* Mill, *Logic*, vol. i, p. 36. My references are to the 4th ed.

† Whately, *Logic*, Book II, chap. v, sec. 1.

‡ Bain, *Logic*, vol. i, p. 67.

§ Venn, *Empirical Logic*, p. 183, *seq.*

|| *Studies in Formal Logic*, p. 30. Dr. Keynes, who proposes to distinguish *connotation*, as the attributes implied or signified by a name, from *intension*, as those which are mentally associated with it, whether implied or not, and from *comprehension*, as the totality of the attributes possessed in common by the class (*loc. cit.*, p. 27), ascribes both intension and comprehension to the proper name, but denies that it has any connotation.

by nearly all who are, and many who are not,* followers of Mill.† There is, however, obviously something unsatisfactory in having one class of concrete names so entirely different from all the others; and this must, one would suppose, be particularly annoying to those who hold, with Mill, that the connotation and denotation of concrete names vary, not indeed in inverse ratio, as Hamilton had taught, but yet in some way inversely. If from the names of the highest genera, with maximum of denotation and minimum of connotation, we can descend through a regular series of lower and lower species-names with ever-decreasing denotation and increasing connotation, it is disturbing and spoils the symmetry of the system to come at last to a name whose denotation is restricted to a single individual, but whose connotation, instead of being greater than that of the species-name next above it, suddenly vanishes altogether.‡ One would rather expect that, as we have here the minimum of denotation, we should have the maximum of connotation—and accordingly this also has been taught by influential thinkers. Thus Hamilton, *e.g.*, says: "The quantity of comprehension belonging to a notion is the complement of characters which it contains; and this quantity is at its maximum in an individual. The notion of the individual 'Socrates' contains in it, besides a multitude of others, the characters of son of Sophroniscus, Athenian, Greek, European, man, animal, organised being, &c." § And similarly write De Morgan, || Jevons, ¶ and many others.

This view, however, clearly also has its serious difficulties.

* Thus, *e.g.*, Mr. Bosanquet, though he holds the doctrine that a name may be without connotation, to be absurd (*Logic*, vol. i, p. 50), yet speaks of the proper name as, "usually, as such, a mere 'chalk mark,' that minimum of connotation which is a *sine quâ non* of denotation" (*Essays in Philos. Criticism*, ed. by Seth and Haldane, p. 88).

† Dr. Venn says even that the proper name "has been *almost universally* understood as an unmeaning mark imposed on an individual for the purpose of distinguishing him," its "express function" being to bar confusion "by drawing a clear distinction between the names which do, and those which do not, imply attributes" (*Empirical Logic*, p. 184).

‡ Those who take Mill's view do not hold that this is the case with all names of individuals. Mill himself was careful to distinguish connotative singular names from proper names in this respect (*Logic*, vol. i, pp. 34, *seq.*), and the same has usually been done by those who adopt his view. As Dr. Keynes points out (*Studies in Formal Logic*, p. 27), it is a mistake, and misleading, to throw the two together in discussing this subject, as is done by Jevons in pp. 2 and 3 of his *Studies in Deductive Logic*.

§ Hamilton, *Lectures*, vol. iii, p. 220.

|| De Morgan, *Formal Logic*, p. 228 (chap. xii).

¶ Jevons, *Elem. Lessons in Logic*, p. 42; *Principles of Science*, p. 27.

Suppose there were another man who was also a "son of Sophroniscus, an Athenian, Greek, European, man, animal, organised being," would he on that account be entitled to the name "Socrates"? Clearly not. How many, and which, of the "multitude of other characters" must he possess to entitle him to that name? If we are to apply the proper name "Socrates" in this way, then, to use De Morgan's words, the definition by which we decide that "this is Socrates" must clearly be "so close as to fit only one man that ever lived";* and if the proper name is to connote all this, its meaning certainly becomes startlingly large. Can a name connote such a group of attributes that they are all possessed only by the one man Socrates? And do we address him as Socrates because he possesses them all? It certainly seems paradoxical to say "yes"; nevertheless I believe that the truth lies on this side, and that it is only by adopting a view approaching this that consistency can be introduced into logical theory.

Mill's view of the Non-Connotation of Proper Names is put very clearly in the following passages†: "Proper names are not connotative; they denote the individuals who are called by them; but they do not indicate or imply any attributes as belonging to those individuals. When we name a child by the name Paul, or a dog by the name Cæsar, these names are simply marks used to enable those individuals to be made subjects of discourse. It may be said, indeed, that we must have had some reason for giving them those names rather than any others; and this is true; but the name once given becomes independent of the reason. . . . It is no part of the signification of the name John that the father of the person so called bore the same name; nor even of the name Dartmouth to be situated at the mouth of the Dart. . . . Proper names are attached to the objects themselves, and are not dependent on the continuance of any attribute of the object" (p. 34).

"When we predicate of anything its proper name; when we say, pointing to a man, this is Brown or Smith, or pointing to a city, that is York, we do not merely by so doing convey to the hearer any information about them, except that those are their names. By enabling him to identify the individuals, we may connect them with information previously possessed by him; by saying, this is York, we may tell him that it contains the Minster. But this is in virtue of what he has previously heard concerning York, not by anything implied in the name. It is otherwise when things are spoken of by connotative names. When we say, the town is built of marble, we

* De Morgan, *Formal Logic*, loc. cit.

† Mill, *Logic*, Book I, chap. ii, sec. 5.

give the hearer what may be entirely new information, and this merely by the signification of the many-worded connotative name 'built of marble.' Such names are not signs of the mere objects, invented because we have occasion to think and speak of those objects individually; but signs which accompany an attribute: a kind of livery in which the attribute clothes all objects which are recognised as possessing it. They are not mere marks, but more, that is to say significant marks; and the connotation is what constitutes their signification" (p. 37).

It will not, I presume, be denied by anybody that there is a real difference between proper and general names. We call Mr. Gladstone "Mr. Gladstone" in a different sense from that in which we call him "a man," or even "the Prime Minister of England in 1893." But is the difference that in the one case there is a connotation, in the other there is none?

One thing is clear at the outset. Whether the name "Mr. Gladstone" has, or has not, a connotation, it certainly does not connote either gladness or the properties of stones. Were it not for the arguments which are always cropping up in discussions on this subject—as they do, for instance, in the passage just quoted from Mill—it would surely seem superfluous to point out that the connotation of the proper name, if it has one, has nothing to do with the separate meaning of the words or syllables of which it may be composed, and that such arguments as that proper names may become apparently unsuitable without being changed on that account—that Dartmouth, for example, would continue to be called Dartmouth, though the river should no longer enter the sea in the neighbourhood of the town—are therefore quite irrelevant.* "Hippopotamus" connotes the properties neither of rivers nor of horses, but we do not deny that it has a connotation on that account; and just so, if proper names have a connotation at all, "York" and "Williams" will have their connotation on the same grounds and in the same manner as "Dartmouth," "Brown," or "Younghusband."

Another misconception closely allied to the last-named must also be got out of the way. Mill, it will be remembered, says †: "It may

* The more careful writers do not, indeed, as a rule lay much stress on these "etymology" arguments; yet they reproduce them. Thus even Dr. Venn appears to argue (*Empir. Logic*, p. 186) that because "the logician has nothing to do with the etymology of any term," and because to him, for example, "the name Brentford no more implies a ford through the Brent than does Wednesday imply a portion of time which is somehow consecrated to or named after Wodin," therefore proper names have nothing but denotation. Compare Keynes, *Stud. in Formal Logic*, p. 39.

† *Logic*, loc. cit., p. 34.

be said, indeed, that we must have had some reason for giving [to the child or the place the names Paul and Dartmouth] rather than any others; and this is true; but the name once given becomes independent of the reason. A man may have been named John because that was the name of his father; a town may have been named Dartmouth because it is situated at the mouth of the Dart," and so on. And similar considerations are often brought up in discussions of this question.* But I take it that they have really nothing whatever to do with the question before us. It matters as little to the connotation of his name what reasons may have induced a man's godfathers and godmothers to call him John rather than James or Peter, as it matters to the connotation of the class name what reasons have induced different sets of men to call the same class of objects by the different names, ἵππος, equus, horse, Pferd, cheval, &c. The connotation is not affected thereby, and the reasons which led to the selection of one name rather than the other, though of great interest to the philologist, do not in the slightest degree concern the logician in the case either of the general or of the proper name. We may, therefore, readily admit that proper names may be given, and that the names of men and women nearly always are given, not to signify the possession of any particular attributes but quite arbitrarily, and that any other names would do equally well; and we may dismiss that consideration from our thoughts. When, however, the name *has been* given, it is no longer open to us to call the same man Socrates or Plato at our option; and the question is whether such name, as it is now fixed in denotation, has also become connotative or not.†

It is only when it expresses what may be actual thought—that is to say, only when it forms part of propositions—that the meaning of a name or term comes out. It is, therefore, as they appear in propositions that we must study names. Suppose, then, that instead of saying "This is York," I say "This is a city." I am now using an undoubtedly connotative term, and, if my companion did not know the constitution of the group of houses before him, I am giving him, as Mill says, "entirely new information."

What information?

* See, e.g., Venn, *Empir. Logic*, p. 185, *seq.*; Keynes, *Stud. in Formal Logic*, p. 30; Bosanquet, *Logic*, vol. i, pp. 52, *seq.*

† If we say that such names as Strongi'th'arm, Smith, &c., derived any connotation when first given from the fact that the individuals so named had strong arms, were smiths, &c., we must admit, with Dr. Keynes, that the names "soon ceased to be connotative" in that sense (*Stud. in Formal Logic*, p. 30). With what I mean by connotation, however, it is precisely the reverse. That is at its minimum when the name is first given, but rapidly increases.

Surely the answer must be that that depends on the meaning which he individually attaches to the word "city." Whether he understands me to have told him that it is "a town, incorporated, which is, or has been, the see of a bishop" (Blackstone), or only that it is "a large collection of houses and inhabitants" (Johnson), or whatever else he understands, will depend on his education and the amount of his knowledge on that particular subject. What, then, is the essential difference between the propositions "This is York," and "This is a city"? If either conveys any information it is surely by enabling the hearer, in Mill's words, "to connect the object with information previously possessed by him," and this in the one case precisely as much as in the other. If he knows that "York is a city," "that it contains the Minster," that this, that, and the other event have happened at York, and that his friend, Mr. S., lives there, then by telling him "This is York" I am telling him all that I should have told him by saying "This is a city," and a great deal more. Whether all this, or any part of it, can properly be said to be "connoted" by the name York is, of course, another question; but if there is any good ground for ascribing the information conveyed to connotation in the one case and not in the other, that ground surely does not appear in the reason brought forward by Mill.

True, if my friend had never heard of York before, the information given to him by my proposition, "This is York," is not great—nothing more, in fact, than that he may in future call the object by that name. But how if he had never heard of the word "city"? Do I, in that case, give him any more or any different kind of information by telling him "This is a city"?

That we cannot make an intelligent use of names without *knowing their meanings*, and that if proper names have a meaning this must apply to them just as much as to general names, is so self-evident that it seems trifling to insist on it. Yet in discussions on this subject it appears constantly to be dropping out of sight! Thus, Dr. Venn, for example, discusses the amount of information which we could derive from finding in a parish register the entry of the burial of "John Thistlethwaite Barker, farrier," if we knew nothing of any man so named.* We may cheerfully admit that all that we could count on with any confidence would be that given by the last word, "farrier." But quite as little as, or still less than, we can infer from his proper name would be given to us by the fullest description of the man if he had been buried, *e.g.*, in Hungary and the register were made out in Magyar, of which we happened to be ignorant. As our ignorance does not prevent the Magyar words from being

* *Empir. Logic*, p. 185.

connotative to those who understand them, just so little does our want of knowledge about John Thistlethwaite Barker prevent the entry of his name in a register from giving information to those who were acquainted with that gentleman.*

In many cases, indeed, we are able to make a guess at at least a portion of the connotation of a general name whose meaning we do not know. We know, of course, that it is a mere guess, and that if we act upon it we do so at our peril; but we nevertheless make the guess. For example, if, in an instrument maker's window, I see "Electro Phonometers" advertised for sale, having never either seen or heard of an instrument of this name, I shall not be able to picture to myself the form of the object offered, and shall know nothing of its principle or of its precise purpose and use: but I shall at least guess, with more or less confidence, that it is an instrument, that it can be used in some way to measure sounds, and that it does this by means of electricity. It is precisely the same with *proper* names. Suppose that I tell you that at Argamasilla I met Israel Moses, Juan Fernandez, Heinrich Meyer, and Mary Robinson. You know neither the place nor the persons—or, as is also said, you do not know the names. But are you in doubt whether I am speaking of places and persons or of tables and chairs? You will certainly understand, at the very least, that at some place unknown to you I met four human beings of whom I know something, and that of these three were males, one a female. In the present case you will probably be able further to make a pretty confident guess as to the nationality, and even as to the religious belief of some at least of the party. If you do know the place and any of the persons, the information given is, of course, much greater. Now, suppose that, instead of using the proper names given above, I say "At a certain place I met four persons." I am now using only names, whose meaning you know. But have I given you more information than before, or less? Surely not more! although in the latter case the words are all connotative, while in the former we are told that they are mere marks destitute of all meaning.

* Mr. Bosanquet (*Knowledge and Reality*, p. 75) admits that "it is difficult to distinguish such an announcement as 'Mr. Fawcett is dead,' in respect of its significance, from such a sentence as 'The Postmaster-General is dead.' But," he adds, "it must be remembered that ordinary proper names have not the significance that is possessed by those of eminent men."

This, I take it, is only to say that the meaning, or significance, of the names of eminent men is known to more persons than that of ordinary men. To the next-door neighbour of Mr. Hopkins, a tobacconist, there would be just the same difficulty in distinguishing between the significance of the propositions, "Mr. Hopkins is dead," and "The tobacconist next door is dead," as Mr. Bosanquet finds in distinguishing between the two propositions he quotes.

A man calls his Newfoundland dog "Cæsar." This he does, not to signify that it possesses any particular properties (though he would hardly select that name for a small animal), but simply because the name pleases him. His little child, learning to speak, hears the dog called, now "Cæsar," now "bow-wow." The two names will denote, and vaguely connote, to the child precisely the same. A new dog, a Scotch terrier, becomes an inmate of the house. This also is called "bow-wow," but is not called "Cæsar." It is called, say, "Scamp." "Bow-wow" will now evidently denote to the child more than either "Cæsar" or "Scamp." Does it connote more? Say that it connotes to him being a "warm, woolly, four-footed playmate." Surely both "Cæsar" and "Scamp" will also connote all this, and more: the former large size, quiet movements, &c., the latter smaller size, brisker movements, &c. Shall we say that so soon as the child has learnt so many properties connoted by the name "Cæsar" that it will in that sense apply to no object in the world but one, that name ceases to connote to him anything at all?

The name, it would appear, in such a case has not lost but acquired fresh meaning; and I am at a loss to understand why we should deny to that meaning the name of connotation. It appears to have precisely Mill's characteristics of a connotation. I see an object coming towards me. I say "That is Robinson." Why do I so say? Surely (to use Mill's words) "because the object possesses, and to signify that it possesses, certain attributes."* If its attributes were somewhat different, I should not call it "Robinson," but "Brown," or "Smith," or a mastiff, a carriage, or &c., as the case might be. These attributes, which are thus proper to Robinson, and not, as a whole group, to other objects, appear then to be what entitle the object in question to the name Robinson, and are, I cannot but think, connoted by that name.

Such considerations appear to prove, and with a force which is to me irresistible, that the proper name not only does connote but has a very large connotation. But when we ask "*What*, then, precisely does it connote?" and "What is the real nature of that difference between the proper name and the ordinary general or singular name, which we have already admitted does exist?" it is by no means easy to give an answer.

Perhaps a consideration of a few of the objections to the connotation of proper names may help us towards one.

1. It may be objected that we have no difficulty in transferring a name from one individual to another. Two very different men may both be called Socrates without our being conscious of any impro-

* Mill, *Logic*, vol. i, p. 32.

priety in the application. Innumerable men are called John, and there is no greater likeness or community of properties between all the Johns than between as many Johns and James's or Peters. How, then, can "Socrates" or "John" connote any properties?

To this objection, of course, we have a ready answer. The names are simply homonymous in these cases. The proper name of any one individual is really a *different name* from that of any other, and it is (from the logical point of view) only an accident, arising from the paucity of names or from other circumstances, that many of these are spelled and pronounced alike. As a matter of fact, when one first goes to Greece it does sometimes give one a little shock to hear persons called Xenophon, Aristides, Melpomene, &c., who are very different from those whom one has been used to call by those names: but the fact that such differences exist, and that they almost immediately cease from disturbing or even striking us, no more proves that in each of these cases there is no connotation than the fact that an evening party is different from a child's plaything, and that we have no difficulty in calling both by the same name, proves that there is no connotation to the word "ball." The difficulty, indeed (such as it is), would not be diminished in the slightest degree by any amount of similarity between two men called by the same name.

2. It may be objected, again, that the connotation indicates certain properties common to the class denoted by the name: but how can there be any *common* properties when the name denotes only one individual? Here again the answer seems obvious, and the objection indeed little more than a play on words. The common properties of a class of one would appear to be simply the properties of that individual: and if there is a connotation to the name "the present Prime Minister of England," there is not, on that score, any reason against there being a connotation to the name "Lord Rosebery."

As already observed, however, the difference comes out very clearly in such a case as that last mentioned. When Lord Rosebery resigns his office, the *denotation* of the former name will change; not so that of the latter: and we shall have to ask how this difference is related to the respective *connotations* of the two names.

3. Again it is objected that the proper name cannot be predicated, as it could if it were connotative.

The metaphysical difficulties in the way of predicating substance do not concern us here, and, from the logical point of view, the answer to this objection is, that it is not true. Mill has already furnished us with instances of the predication of "York," "Brown," and "Smith," and there is no difficulty in finding any number of such cases.

It is true that the predication of proper names is subject to an important restriction. As a proper name, whether connotative or not, denotes only one object, it is clear that that one object is the only one of which it can be predicated. A proposition with a proper name for its predicate is not, however, on that account necessarily tautologous or unmeaning, like "Socrates is Socrates." The same object may appear, in subject and predicate, under different designations, and the fact that one of these may be predicated of the other—in this case, therefore, that they both denote the same object—may be to the hearer entirely new information. Suppose, for example, that I have asserted some fact as to which you are incredulous. If I say, "My authority is Professor Huxley," I certainly give information—information which may greatly modify your opinion as to the probability of the fact in question.

None of these objections appears, therefore, to touch the question of the connotation of proper names. But it will have been observed that they all bring out, in one form or the other, the fact that it is of the essence of the proper name to *denote only one individual*. To distinguish that one individual, whether person, place, or thing, is in fact the first purpose for which a proper name is given: and this is so completely its prime function that the moment it ceases to distinguish that individual it loses its meaning and becomes a different word.

Any other information it may give, either connotatively or otherwise, is therefore given only secondarily: and we appear thus to have a sufficient ground for the difference between the proper and the singular name as to which we were inquiring.* In the years 1760 and 1784 the singular name "The present Prime Minister of England" had different meanings, both denotative and connotative: denotative, because it denoted different individuals; connotative, because the time signified by the word "present" was different, and because of all the consequences which that difference of time brought with it. But so by far the larger part of the connotation is identical in the two cases, that there is a sense in which it may be said that the two connotations are the same. The names "Mr. Pitt" had in those years the same difference of denotation. They denoted the same two individuals. And no doubt the names "the present Prime Minister," like the names "Mr. Pitt," were in those years often used merely to denote the one who was holding the office at the time. But there is this difference: the merely *singular* name would designate the person meant by drawing attention to his possessing

* The distinction is clearly put by Mr. Bosanquet, *Logic*, vol. i, p. 51, although, as will be seen, I think he is mistaken as to what is connoted by the proper name.

the attributes forming the common connotation just referred to. The *proper* name would effect the same end, not by drawing attention to what was common to the two men (their humanity, nationality, &c.), but in some more direct manner: and if (as I suppose must have been the case) any of the properties of the Mr. Pitt meant were mentally used for this purpose, they were probably chiefly those in which he *differed*, and by which he was *distinguished*, both from the other Mr. Pitt and from other men.

But if so, *what* does the proper name really connote?

It would appear that the answer must be, that what it connotes to us will depend on what we know about the individual denoted by the name. We have already seen that if, pointing to a city, I tell you "That is York," the amount of information that I thereby give you depends altogether upon what you know about York. According to your knowledge, or your ignorance, it may be anything between the mere fact that the place pointed to is called by that name and that it is the city which has played such and such a part in English history and been the scene of such and such events, that it contains the Minster, has so and so many inhabitants, is the see of an archbishop, &c., &c., &c.

Similarly with the names of persons. If I say, for example, "Immanuel Kant was born on the 22nd April, 1724," I may tell one man only that on that day was born a child who was probably the son of a Mr. Kant and who subsequently received the name Immanuel; another will know that the child referred to was a German and afterwards became a well-known philosopher; a third may know that he wrote certain works which produced a revolution in philosophy; a fourth, that he became Professor of Philosophy at Königsberg, that he held this, that, and the other philosophical views, wrote such and such books, had such and such distinguished pupils and opponents, did and suffered such and such things, died in 1804, &c., &c., &c.

Are we, then, to say that the proper name connotes to each man what he knows, or happens at the time to remember, about the individual denoted by it? If so, we must admit that the connotation of such a name is a very uncertain and varying quantity, and we appear to be landed in a kind of chaos.

This certainly sounds somewhat alarming and as though so fluctuating a connotation could not possibly be of any use, but must lead rather to confusion. We may, however, be somewhat reassured by remembering, in the first place, that if indeed it is so, it does not lead to much practical inconvenience—the difference in different men's knowledge about the man named does not, as a matter of fact, often interfere with their agreement as to who it is

that they are talking about: and, in the second place, that we have something similar in the case of *general* names also.

We have already seen that if, instead of saying "That is York," I say "That is a city," although "city" is admittedly a connotative name, it by no means follows that I shall give to every hearer exactly the same information. On the contrary, the information will vary according to the knowledge of the respective hearers: and if the connotation of the word is always exactly as it is defined, say by Blackstone, we must admit that very many persons use it without knowing its connotation or meaning.

Logic, indeed, is fond of postulating—or of assuming without special notice—that the connotation of its general names is fixed, and that all men use their words in precisely the same sense: and it would undoubtedly be very convenient, not only for the purposes of Logic but also for life in general, if they did so. In the admirable first chapter of his *Empirical or Inductive Logic*, in which he gives an account of the assumptions which the science, according to his view of it, is obliged to make at the outset, Dr. Venn says, in introducing this postulate:* "In reference to the statement that words must have the same meaning in the minds of all who use them, one has really some difficulty in insisting upon this as a postulate; for it is at once so absolutely necessary for scientific accuracy, and yet in practice so obviously untrue."† Untrue in practice it most certainly is; and this to so great an extent that we shall run no great risk in saying that the words as to whose connotation all men are completely in accord are comparatively very few in number: and when we are considering, not the necessities of an abstract science but the real logical meaning of the words we use as the symbols for our thoughts, we are bound not only not to ignore that fact, but to take it into careful consideration.‡

* *Empir. Logic*, p. 37.

† Similarly Dr. Keynes observes (*Studies in Formal Logic*, p. 31-2): "It has to be borne in mind that as a matter of fact different people may by the same name mean to imply different things, that is, that attributes they would include in the connotation of the name would be different; and not unfrequently some of us may be unable to say precisely what is the meaning that we ourselves attach to the words we use. In Formal Logic, however, we work on the assumption that every name has a fixed and definite connotation. . . . It may be observed that in the case of an ideal language, every name would have the same fixed and precise meaning for every one."

‡ I need hardly say that *throughout the same logical operation* the meanings of our words must of course remain absolutely the same. This is a postulate of common thought no less than of Formal Logic, and is expressed by the Laws of Identity and of Contradiction as fundamental laws of thought. Unless "A is A" is true, and "A is not A" is false, all thought is impossible.

How it comes about that general names can do their work and that men are able to communicate with one another by their means without the greatest confusion if their denotation is fixed by the connotation, and if the connotation is thus different for one man from what it is for another. I cannot, indeed, consider in the present paper. I must content myself with pointing to the fact that the problem exists: that *practically* it solves itself—probably mainly by the mutually corrective action of connotation and denotation; and that it is in reality only a part of the larger problem, how it is possible that all the different “real worlds” as they must appear in the minds of the several human observers, should harmonise in the manner in which we find that as a matter of fact they do. If each one of us has to form his own “world” out of the elements furnished to him by his experience,* and if these elements can hardly be throughout completely the same in any two cases, it will follow that the “world of meanings”—the significance of those symbols by which he represents the objects of his world—must be, at least to a very great extent, different in the case of any one individual from what it is in that of any other.† This is surely a fact of great importance for practical logic, and it is a pity if the exigencies of any particular treatment of the science oblige logicians to leave it out of sight. As regards the connotation of names, I am convinced that the habit of ignoring such differences and of speaking as if the connotation were fixed once for all and were the same for all men, greatly diminishes that “intellectual profit” which Dr. Venn so truly says may be derived from the study of the theory of the import of names.‡ Indeed I should not be surprised if the unreality which it introduces into the science were one of the causes of the low estimation in which Logic, and particularly Formal Logic, is unfortunately so often held.§

But however this may be, it is admitted on all hands that practically our language is still very far from that ideal state in which “every name would have the same fixed and precise meaning for

* The term “experience” must of course be taken in a wide sense, to include his special education, his intercourse with his fellow men, &c.

† This is well brought out by Mr. Bosanquet, *Logic, Introd.*, sec. 7, vol. i, pp. 41, *seq.*, cf. p. 82, &c.

‡ *Empir. Logic*, p. 173.

§ If, as Mill suggests (*Logic*, vol. 1, p. 32), the connotation of “man” is “corporeity, rationality, animal life, and a certain external form, which for distinction we call the human”—and this is a much fuller connotation than is allowed by some logicians—then according to logic, when we predicate “man,” we assert the possession of those attributes, neither more nor less. But we all feel that we mean to say a great deal more of an object when we call it “a man,” and we are annoyed at the science which, by fixing the above as *the* connotation, appears to assert the contrary.

everyone" (Keynes); and if the connotation of many general names thus varies so greatly from individual to individual, we need not be surprised if the same is the case with proper names also.

Returning, then, to the question, *What does a proper name connote?* I must say in the first place—

(1) That by the connotation of a proper name I do *not* mean that kind of general meaning which some proper names acquire "when they are used to designate a certain type of persons; for example, a Diogenes, a Thomas, a Don Quixote, a Paul Pry, a Benedick, a Socrates." Everyone will agree with Dr. Keynes that "when so used such names have really ceased to be proper names at all; they have come to possess all the characteristics of general names."*

Nor (2) do I mean anything that we can predicate of all the objects that happen to be called by some particular proper name. We may readily agree with Miss Jones that "of all the objects called John Smith we can only predicate (1) what is common to all subjects; (2) unique individuality; (3) a distinctive name; (4) what that name is (*i.e.*, John Smith)";† but this does not at all affect my question. I have already observed that, in the sense in which I speak of it in this paper, "John Smith" is a *different name* as applied to each different individual, and I have therefore nothing to do with looking for properties common to all those who are so named. If we were to look for the properties that we can predicate of all objects called by such general names as "ball," or "cricket," our list would not be much longer or more important than in the case of "John Smith."

What I do mean by the connotation of a proper name is, all those properties, characteristics, or whatever else you like to call them, which the speaker or the hearer takes to be so implied when we call any object by its proper name, that if any of them cannot truly be predicated of the object in question, the proper name is not properly applied to it in the sense in which it is used.

Now if we so understand it, the connotation of, for example, a man's proper name will extend, for each of us, to every most trivial circumstance connected with him of which we happen to be aware. So far as our knowledge extends, it will comprise every property he possesses, every event in his life,‡ every detail of his personal

* Keynes, *Studies in Formal Logic*, p. 30; cf. Bosanquet, *Logic*, vol. i, p. 51, &c.; also the same author's Essay on "Logic as the Science of Knowledge," in *Essays in Philos. Criticism*, ed. by Seth and Haldane, p. 88.

† E. E. C. Jones, *Introd. to General Logic*, p. 7. As a matter of fact I think we might probably predicate rather more of them, viz., humanity, &c. But this is doubtful. There may be ships, &c., so called.

‡ That is to say, the fact of its having occurred to him.

appearance at different periods of his life, &c., &c., &c. It sounds absurd to say that the name can connote all this, or even to speak of a connotation at all if what we mean is such a miscellaneous group of properties and circumstances, which varies so greatly not only between man and man but in the same man from time to time.* But consider the circumstances:

Suppose that someone with whom you are conversing, mentions the name "Kant." You take it for granted that he is referring to the Königsberg philosopher, but it presently appears that the man he is speaking of, neither was a philosopher nor resided at Königsberg. You therefore know at once that this is not the Kant of whom you were thinking, that is to say, that the name "Kant" in the sense in which you had understood it, is not applicable to him: and if the contention of this paper is at all correct "having been a philosopher and resided at Königsberg" must be connoted by the name "Kant" in the sense in which you had understood it.

But if we admit this, we must at once go a great deal further. If you know, for example, that the Kant you mean was born in 1724, and was so regular in his habits that he took the same walk at exactly the same hour every day during many years of his life, then you will have to deny the name "Kant" (as the name of that philosopher) to anyone who was not born in that year, or who had never been in the habit of taking such regular walks, and these characteristics will therefore, by the same reasoning, be connoted by the name. If, for example, you would unhesitatingly say that an opinion discussed, say, in a work published in 1730, was not first put forward by Kant, this is because its author could not have been born so late as 1724, and therefore could not have been "Kant"; that is to say, to call him Kant is to assert that he was born in that year. And similarly with every characteristic, every event, everything of any kind which we know to be true of Kant. If we once admit any one of them—*i.e.*, if we allow that there is any connotation at all—I do not see how we can exclude any other. It must be all or none. And as I have already explained that in my opinion there is and must be a connotation—as, indeed, the doctrine that any concrete name can be without a connotation is unintelligible to me—I am forced to take the latter alternative, that the connotation really does embrace them all.

But we must, I think, go further still. The proper name applies,

* It is hardly necessary to observe that, in this sense, the connotation to me of the name Kant, for example, will be very different just after I have read a biography of that philosopher, or have been studying any of his works, than it was just before, or will be in a year or two.

and is meant to apply, in the same sense to *one individual only*; and (unless we will give up the principle that in connotative names connotation and denotation determine one another) this fact also must, it appears to me, be included in its connotation. I cannot agree with De Morgan,* that the fact "that there was only one Julius Cæsar . . . and that our definition of Cæsar is so close as to fit only one man that ever lived, makes no essential difference in the character of the proposition ['Julius Cæsar was a Roman']," or that such a proposition "is only objectively singular but ideally plural" (*loc. cit.*). On the contrary, when I call Julius Cæsar by his proper name, I draw particular attention to the fact that I am speaking of one particular man—the man whom we know as the conqueror of Gaul, &c., &c.—and that it is of that individual that I am asserting whatever I now predicate of him. As already observed, it is the fact that this individuality of application is included in the meaning (connotation) of the proper name that makes the essential difference between the proper name and any other kind of singular name (such as "the great Roman statesman who was murdered on the Ides of March in the year 44 B.C.").

I must apologise for having dwelt with what I fear will be regarded as tedious insistence upon a matter which may appear to be of comparatively little importance. My excuse must be, in the first place, that the theory of the meaning of proper names is closely connected with that of general names, and so is of no small importance to logical theory in general; and in the second place, that nearly all the logicians with whom I am generally most in accord, take what I believe to be the wrong side on this question, so that I was anxious to put what appears to me to be the correct view as clearly as possible. It would be presumptuous in me to go against such a body of opinion if there were not, as I have mentioned, eminent logical authorities on the other side also. And, appearances and the authority of logicians to the contrary notwithstanding, I cannot think that (apart from express theory) the general opinion is really against us. For example, when Mr. Bosanquet asks,† with reference to the proposition "Cæsar crossed the Rubicon," "Where is the significance of crossing the Rubicon, if we do not affirm it of the conqueror of Gaul, the rival of Pompey, and the true founder of the Roman monarchy?" What is this but to say that by calling the subject of the proposition "Cæsar," we assert him to have been the conqueror of Gaul, the rival of Pompey, and the true founder of the Roman monarchy—*i.e.*, that all these things,

* *Formal Logic*, p. 228.

† *Logic*, vol. i, p. 210.

and if so also many more, are connoted by the name "Cæsar," when it refers to him?*

So also, I think, few persons will deny that if I say, *e.g.*, "the principal speaker was Mr. Gladstone," I am giving you, not less but more information about the speaker in question, than if, instead of "Mr. Gladstone," I say either "a member of Parliament," or "an eminent man," or "a statesman," or "a Liberal leader." It will be admitted that the predicate "Mr. Gladstone," tells us all that is told us by all these other connotative predicates put together, and more: and, if so, I cannot see how it can be denied that it also connotes more.

THE RATIONALITY OF HEDONISM.

By Miss E. E. CONSTANCE JONES.

WHAT I desire to defend in this paper is the ethical doctrine that the proper end of Human Action is the promotion of Happiness, that "the conduct which, under any given circumstances is objectively right, is that which will produce the greatest amount of happiness on the whole" (*Methods of Ethics*, Book IV, Chapter I). It is a doctrine of *what ought to be done*, not of what merely has been or is or will be in human action; it implies a standard with which the *actual* has to be compared, and by which it must be judged. No doubt what *ought to be* is limited by what is possible; no doubt also what *ought to be* in some sense *is*; but of everything of which we can speak we may say that *in some sense it is*, and equally we may say, perhaps, that *in some sense it is not*—all depends upon the particular kind of existence which is meant. But if by *is* we mean *existent as human conduct*, then I do not see how *is* can be resolved into *ought*, though it may be coincident with it—in logical phrase, connotation must remain different though denotation may be identical. Of course, *as far as men act rightly*, denotation of *is* and *ought* is actually coincident.

Perhaps, *in a sense*, everything is good, everything is true, every-

* As the same writer elsewhere says ("On the Importance of a True Theory of Identity," in *Mind*, vol. xiii, p. 358): "In order to give this judgment its full meaning we must not try to cut it down . . . reducing Cæsar to mean merely a creature that crossed the Rubicon. . . . Precisely *the point of the judgment* is that the same *man* united in himself . . . say the relations of being the conqueror of Gaul, and of marching into Italy." "Cæsar" thus *means* these and other "differences in identity"; and it can do this only by what I call connoting them.

thing is beautiful—and perhaps again, *in a sense*, Goodness is Beauty, and Beauty is Truth; but before these identifications can be received as useful, or even as significant, we need to know *in what sense*—a mere vague feeling of *some* relation (that is, of *some unity*) between them is perhaps inevitable, but is merely a datum of unreflective common sense, and a starting-point, and not by any means a goal, of philosophical thought. To determine clearly and intelligibly in *what* sense the Good is the True, or what is the relation between Ought and Is, is a task at which Philosophy must aim, but which it has not perhaps yet satisfactorily accomplished. And it is the task of Philosophy or Metaphysics, and is no more the business of the Science of Ethics than a determination of the relation between Mind and Matter is the business of the Science of Psychology. No doubt Ethics, considered as a Science, has what has been called a metaphysical basis, and the determination of this is of the last interest and importance; but it is not the science itself, and the great question of scientific Ethics—*what* is it that is Right?—has to be discussed separately from the investigation of that basis. This is simply the general scientific procedure which the limitation of our powers, the “narrowness of consciousness,” makes necessary in all cases. Every part is certainly part of the whole to which it belongs; but if knowledge of any part is to be improved and increased, attention must for the time be concentrated on it. The very breath of life to us, as thinking creatures with finite powers of attention, is abstraction and elimination.

If we, imperfect as we are, are here and now seeking the guidance of Ethical Science, are asking after the End which we ought to aim at, we must—it seems to me—remember that the relevant End in this inquiry must be an End (1) which can be attained, or approximated to, by human action, and (2) which is desirable to us, being what we are, and limited as we are.

It certainly cannot be an all-embracing End, which ignores or attempts to obliterate the distinction between Good and Bad, or which identifies what is Good with what is. From some points of view perhaps everything may be “very good,” or at least may be the best that is possible; from the point of view of the Absolute everything—that is, every part of itself—may have worth; from a point of view which I suppose may be called evolutionary, what *is*, and is conjectured to be *coming to be* may be held to be Good, *quâ* existent and expected. But we are (or at any rate appear to ourselves to be) mere parts of the world, and in part at least the result of something not ourselves; and we find that while some things and tendencies in the world, and some results of human action, seem to us desirable, others are not so.

It is sometimes said that the End which is desirable for man must be determined by a consideration of his nature—for instance, we find this view in the great Greek philosophers and in our own Bishop Butler. But it cannot be supposed that a mere observation of what man *is* can give us guidance as to what man ought to do; if it could, we should need no guidance.

To get guidance for right action from observation of the nature of man we must take with us to that observation a principle of selection—Plato and Aristotle take Conformity to the *Reason* that is part of man's nature, and Butler very decidedly, though not so conspicuously, does the same; for all of them, the "Nature" that we ought to follow, is just *that part* of man's nature which they regard as leading to *right* action; and as long as we get no further than this, ethical thought is of course essentially circular (*Cf. Methods of Ethics*, 5th Edition, p. 377, &c.). What is reasonable is to follow Nature, but if we go to Nature as it (in the whole and actually) is, we find that the *reasonable* part of Nature is the only part that we *ought* to be guided by.

No competent moral thinker, I suppose—at least none to whom I should attempt to refer—would refuse to admit that what is *reasonable* in human action is *right*, that the right end for man is the End approved by Reason.

In the controversy as to Ends which runs through the ethical systems of ancient and modern thought, we find first, and chiefly, a conflict between *Pleasure* and *Virtue* as competitors for the rank of the Ultimate Good, or the End of Action. That is to say, Good (or Right) conduct has been held to consist in either (1) promotion of Pleasure or (2) practice of Virtue, conceived as *something other* than promotion of Pleasure. Clearly, as long as we merely say that Good or Right Conduct consists in Virtue, or that Virtue is the End of Action, we have not advanced a single step towards a guide of Action or a Science of Conduct; we have seen that to refer to "Nature" is equally vague; and Perfection, Self-realisation or Self-development, as Ends, share the same defect. Recourse to crude Intuitionism, whether Perceptual or Dogmatic, is not common among ethical thinkers in the present day, and perhaps hardly needs serious attention; but I shall return to it for a moment, at a later point, in connection with a brief consideration of "Self-realisation," which is put forward as the End by the school of Ethical writers who are the most prominent opponents in this generation of Utilitarianism or Rational Hedonism.

I should admit the contention that we must appeal to Reason to *guide us* to the End or Chief Good for man, and also that Reason requires that in this search we should pay careful attention to man's

actual nature: we must undoubtedly know what men are like, what their constitution and circumstances in this world are, what is *possible* for them, before we can even consider the question of what is reasonable for them to do.

It seems almost superfluous here to call to mind that man is a creature both spiritual and material, both intellectual and sensitive—it is by such abstractions and distinctions that we try to set before ourselves, in words and definite thoughts, that complex human nature which is so familiar to us all, in ourselves and in others. That man is sensitive (= capable of feeling Pleasure and Pain) and rational, conscious and self-conscious, intellectual, active and volitional, none would deny.

The Good for such a being, the End which to him is worth pursuing, must be some Good *of consciousness*. Therefore the question becomes: What good of consciousness is it rational for a sensitive, intelligent, and active being to pursue? Is it a good of Will or of Feeling or of Intellect, or some combination of these? We cannot, of course, have any of these constituents in actual isolation, but it may be that in every case it is some one element which we perceive to have intrinsic value—to be Good in itself.

That such intrinsic worth can be asserted of Knowledge or of mere intellectual power is not (so far as I know) maintained by anyone—if it were, Kant has, I think, sufficiently refuted it (*Cf. Grundlegung zur Metaphysik der Sitten*, beginning of Section I). Can we say then, with Kant, that “the only good thing in the world or even out of it, is the Good Will”—that is, the will to do that which is esteemed to be right, and to do it *because* esteemed right?

To hold this view is to maintain that no “well-intentioned” person can do wrong; that there is no such thing as conscientious blundering, that *what* is done does not matter, but only the motive from which it is done. This seems utterly contrary both to Common Sense and Reflection, and it is in a certain important sense, self-contradictory—for the Good Will is held to be of supreme importance not in one man only but in all, and the influence of many well-meant actions, which in ordinary life are what would be called ill-judged, may be to cause others to act from very reprehensible motives—resentment, irritation, jealousy, and so forth. So that manifestations of the “Good Will” in one may hinder that Will in others.

The view that no one ever desires what does not *seem* to him good and right is an exaggeration of Kant's doctrine into the doctrine that subjective wrong-doing is an impossibility—and the view that the object of desire is always *good* (= desirable, what ought to be desired), is a further extension of the doctrine of the

impossibility of wrong-doing—to the effect that all *objective* wrong-doing is impossible (on the view that action is prompted by desire).

All these doctrines seem to me to be outrageous paradoxes—utterly at variance with the facts of experience and with sound judgment, and they would seem to make any Science of Ethics, any systematisation of right conduct, impossible or unnecessary—to a great extent they are attempts to break down the distinction between what *ought to be* and what *is*.

I will ask next what can be said for the view that excellence of Feeling—that is, Pleasure and absence of Pain—is that which is, for man, intrinsically worth having; and will afterwards consider some objections to the doctrine that it is so, and the competing view that the Good for man must be Self-realisation—a good corresponding to all the elements of his nature.

The question here is whether Happiness (= Pleasure and absence of Pain) can reasonably be regarded as intrinsically and ultimately worth aiming at—whether it is something which is *in itself* to be desired, something which makes the portion of consciousness in which it occurs intrinsically worth living through; and whether, on the other hand, its *absence* is something which makes the portion of consciousness in which it occurs *in itself* worthy of avoidance. We might, similarly, abstract in considering Truth or Beauty without reference to the processes by which the one had been discovered or the other produced—though of course in either case there can be no *actual separation* corresponding to the abstraction or distinction.

I should like, in the first place, to distinguish between *Pleasure* (and Pain) and *causes or concomitants* of Pleasure (or Pain), and to emphasise the point that I am trying to abstract from differences of cause and accompaniment, and to fix attention upon the actual characteristic of consciousness which we understand by Happiness or Pleasure or Pleasant Feeling, and its reverse—in other words, to consider exclusively what has been called the *Feeling-tone* of consciousness, *i.e.*, its pleasurable or painfulness. The psychological question as to what men *can* and *do* desire I am not at this moment inquiring into; but I should like here just to draw attention to the fact (1) that Psychological Hedonism (the doctrine that no one does or can desire anything but his own Pleasure or freedom from Pain) has been, as I think, conclusively disproved, (2) that even if it were true, it would not only not be a necessary presupposition of Ethical Hedonism (whether Egoistic or Universalistic) but absolutely incompatible with that doctrine.

As Plato thought it would be easier to exhibit the relations of the Virtues in the individual human soul if he looked at them as

"writ large" in the State; and, as in *e.g.*, psychological study, knowledge may be very much helped by observation of some abnormally exaggerated manifestation: so perhaps the worth and unworth of Pleasure and Pain may be most easily seen by taking very marked cases. Take, *e.g.*, any instance of intense pain: are we not forced to judge that such a condition, whatever its accompaniments may be, is *in itself* undesirable? If it were *in itself* desirable, then the longer it continued, and the more it were intensified, the more desirable it would be; but the reverse is the case—the more it is increased in extent and degree the more undesirable it is. And if we could imagine a whole community of sentient individuals, passing an existence of severe continuous unmitigated pain, we must surely judge that for them existence is entirely undesirable. This, of course, is quite compatible with holding it reasonable to encounter and endure Pain for the sake of something beyond—courage and self-control are as necessary on the Utilitarian view as on any other. On the other hand, if there were a community composed of human beings who throughout their existence enjoyed absolute exemption from Pain, and a large share of positive Happiness, we must surely judge that their existence would be *in itself* desirable; and the happier it were made, and the longer it lasted, the more desirable it would be. No doubt, in creatures such as we are, general happiness in a community would be incompatible with the prevalence of what is commonly regarded as evil-doing, and perhaps incompatible with a certain degree of ignorance and stupidity—for creatures like men, the exercise of Reason and the practice of Goodness seem necessary even for the agent's own Happiness. In taking Happiness (*i.e.*, concrete life which is happy) as End, we have to take account of the conditions and concomitants of human Happiness. Accordingly it is sometimes said by writers who object to Hedonistic Ethics that, though Happiness is desirable, it is not the only thing intrinsically desirable, and that Reason and the Good Will are indispensable. In reply to this, I am not only willing but anxious to admit that for any satisfactory system of Ethics, and for any human life that is worth living, Reason and a Good Will are necessary—and in Rational Hedonism or Utilitarianism they have their due place assigned to them. For the Utilitarian makes a first and paramount appeal to Reason—he goes to Reason with the inquiry: *What* is it that it is right to do? *What* is the *content* of right action? *What* is the characteristic by which right action may be recognised?—He acknowledges Reason as sovereign, and it is because, in his view, Reason declares that Happiness is intrinsically worth having, and conduciveness to Happiness, the test of right action—it is *because* of this, that he adopts the so-called

"Hedonistic" End. And if Reason tells us that it is Happiness—excellence of Feeling—that makes any portion of consciousness intrinsically desirable, then the Volition that promotes Happiness is good; and since we cannot have good conduct without a good will (for conduct involves Volition) it appears that the promotion of the Hedonistic End involves both the supremacy of Reason and the conscious direction of the Will to right. We have thus, it would seem, not a mere one-sided Good, but a Good which takes into account, and gives due place to, *all* the elements of man's complex nature. If it is said: This doctrine is not Hedonism, I reply that whatever it may be called, it is the doctrine which takes as the End *Happiness* = happy Consciousness or happy Life—understanding *happy* to mean *pleasant and free from Pain*.

The controversy between the Rational Hedonist and the so-called "Idealist," or "Eudaemonist" moralist is not a controversy between "Feeling" and "Reason," or "Feeling" and "Will"—such a controversy is not possible or even conceivable, for in *any* controversy Reason must be advocate, judge and jury—but it is a controversy concerning the deliverances of Reason itself, in which the disputants are not agreed as to the answer that Reason gives to the question: What is Right Conduct, what is the Ultimate Good for man?

In considering how far Reason makes good the claims of Happiness to be the ultimate End, we may refer to:—

- (1) Its positive claims to acceptance;
- (2) The answers that can be made to objections;
- (3) The other Ends that have been put forward.

(1) Under the first head, besides what has been already urged, it may be pointed out that, on the one hand, the effort of Intuitionism to escape from the conflict and incompleteness of the precepts of Common Sense ("Dogmatic Intuitionism") has resulted in the acceptance (by the so-called "Philosophic Intuitionists," *e.g.*, Clarke) of a principle of universal rational Benevolence, which, on the other hand, furnishes the now accepted basis of Utilitarianism—a principle the truth of which seems to some extremely careful and acute thinkers, to be intuitively perceived—to be self-evident.

It is, further, worthy of mention that people and conduct that we call "Good" are perhaps always *felicific* (promotive of Happiness), that disputed and difficult cases of action are perpetually being decided by an appeal to the balance of Happiness, and that it seems impossible to work out a system of Politics on any other basis than that of Utilitarianism. Also it appears that the Utilitarian principle is in fact ordinarily accepted in Politics—any governmental measure that causes more misery than happiness would, I

think, be generally held to be, on that account alone, sufficiently condemned. And though this argument is not in itself conclusive, still the current opinion of thoughtful and conscientious men on this head, is at least entitled to careful consideration. And any system of Ethics I think stands self-condemned if it is out of touch and out of harmony with Politics. Another important point is, that if we look at the development of Ethical thought and Ethical standards, from country to country, and age to age, and the variation of different contemporaneous codes (Law of Honour, &c.), the Utilitarian standard seems to unify and explain, with striking completeness and ease, the evolution that has taken place, and the divergence that exists. Further, we find that the ever-renewed Ethical controversy between Pleasure and Virtue, as the aim of Life, is explained and allowed for by Utilitarianism (Rational Hedonism). For when we examine what we mean by virtue, we find that (as Butler says): "It is that which all ages and all countries have made profession of in public, it is that which every man you meet puts on the show of, it is that which the primary and fundamental laws of all civil constitutions over the face of the whole earth make it their business and endeavour to enforce the practice of upon mankind: namely, justice, veracity, and regard to common good" (*Dissertation of the Nature of Virtue*)—that is, Justice, Veracity, and (as comparison of passages in the *Dissertation on Virtue* shows) Benevolence. And it would be easy to prove that Justice and Veracity in the members of a community are fundamentally important for the general Happiness. In short, it appears that the ever-recurring moral controversy between Pleasure and Virtue, is neither more nor less than a controversy between the *Agent's Happiness* and the *Happiness of Others*—and is a controversy not between Reason and Unreason, but between competing *reasonable* Ends; and this inevitable dualism or two-fold aspect of the End commended by Reason, still subsists within Utilitarianism (as in Butler's "Intuitionism" and certain modern interpretations of Self-realisation), and in the opinion of its adherents, constitutes the most important difficulty of the system of Universalistic Hedonism.*

It is at this *node* that theoretical difficulty and practical struggle chiefly centre—for it is just here (and in the question as to Free Choice) that, more than anywhere else in Ethics, the fundamental and omnipresent problem of the One in Many and the Many in One makes itself prominent. It is to be remembered that it is a difficulty in no way peculiar to Universalistic Hedonism.

* On the other hand, the explicit recognition of the dualism is one of the distinctive merits of Utilitarianism.

(2) As regards the answers that can be made to the objections which have been brought forward against Hedonism, I can here only offer a very brief summary of the objections that seem most worthy of consideration and the answers that it seems possible to make to them.

Objection 1.—Ethical Hedonism rests upon Psychological Hedonism, and since Psychological Hedonism is to be rejected, therefore Ethical Hedonism is to be rejected.

Answer.—Ethical Hedonism is incompatible with Psychological Hedonism; for if we are, by the constitution of our nature unable to seek anything but our own Pleasure and absence of Pain, our own Pleasure cannot be what we ought voluntarily to seek, and others' Pleasure it is impossible for us to seek.

Objection 2.—The adoption of Pleasure as End is based on a confusion between *Pleasure* and *causes of Pleasure*.

Answer.—This confusion is guarded against by Utilitarian Moralists, who are careful to explain that it is (concrete) *agreeable feeling however caused and accompanied* that is the Hedonistic End.

Objection 3.—The Hedonistic End is impossible because Pleasure is an abstraction.

Answer.—By parity of reasoning, *any* end is impossible; for Satisfaction, Blessedness, Activity, Virtue, Perfection, Self-realisation, Beauty, Truth, &c., are all abstract in the same way. In order to speak of Pleasure as End of Action no more abstraction is necessary than is required to make thought and the use of language possible to us. And it is of course not abstract pleasure (whatever that may be) that is the end of the Utilitarian Moralist, but Concrete Consciousness in which the feeling-element is happy or pleasurable.

Objection 4.—Pleasure is an impossible end because it is not intrinsically valuable, but only a *sense of value*.

Answer.—This reminds one of Lotze's conjecture that Pleasure is our response to, our recognition of, goodness in things. But to us as conscious and sensitive creatures, nothing can be good or valuable except as it affects consciousness—the *value* must consist in some effect produced in consciousness. What effect in consciousness can we point out, that is distinct from concrete Pleasure or Happiness, but of which Pleasure is the *sense*, and the measure? It seems sometimes to be suggested

that the valuable effect of which Pleasure is the sense, is Self-realisation, *i.e.*, Satisfaction of the desires of the true or rational self. But thus the pursuit of *value* brings us back to the point from which we started. For we may ask: If that which is intrinsically valuable is the satisfaction of desire, is it because the object of Desire is intrinsically good or is it because Satisfaction *quâ* Satisfaction is good (or reasonably to be chosen)? If the latter, how does subjective satisfaction differ from Pleasure? If the former, either all desires are for Good—which seems inadmissible—or there is some criterion of Good by which desires may be tested, and we ask what it is? And it seems to me relevant to notice here that not only does Happiness (Pleasure and absence of Pain) appear to be the only thing which is ultimately and intrinsically desirable, from the individual point of view, to any conscious and sentient creature: but also it would seem impossible to esteem, or to be for its own sake interested in, any conscious creature destitute of all capacity of Pleasure and Pain. A conscious but insensitive creature would be a kind of monster.* We regard as most depraved the nature which derives Pleasure from others' pain, and very largely judge of men as Good or Bad by the things they take pleasure in, with direct and special reference to sympathy, and (I think) an ultimate reference in all cases to the felicific influence generally of the causes and accompaniments of their own Pleasure and Pain. Could we, or do we, judge anything to be Good or Bad, if incapable of feeling or producing Pleasure or Pain?

Objection 5.—Again, it has been said that Pleasure is an irrational End, because a Hedonist must evaluate pleasures of the merely sensitive nature, and compare mere sensitive values with rational values—"What is pleasant to sense need not be pleasant to thought"—what is valuable to us as sensitive beings need not be valuable to us as rational beings (*Cf. Mackenzie, Social Philosophy*, p. 224).

Answer.—As *merely sensitive* we could not have any sense of value, and could not estimate Pleasure from any source, or choose any end whatever. Reason as well as Sense must act, in order that anything may be known and distinguished as "pleasant to sense." It is only *as rational* that a man can formulate and adopt the Hedonistic end.

* Is not finite consciousness (as far as we can see or conceive) bound up with capacity of Pleasure and Pain?

Objection 6.—Pleasure is an *undesired* end.

Answer.—In reply to this it seems sufficient to refer to the estimation of Happiness expressed by poets, moralists, and preachers, or in current phrases of congratulation and good wishes, or to the many witnesses, in our own consciousness and in the words and actions of others, that Happiness is an End actually and widely desired. I cannot think that it would be seriously disputed that Happiness is an end very widely desired by men, both for themselves and for others. Unless it is so desired, we must deny the prevalence both of Self-love and of Benevolence, and must be prepared to explain as the result of complicated delusion or hypocrisy, all the wishes for Happiness of which the air is full, *e.g.*, at birthdays and weddings, and when the New Year comes round.

Objection 7.—Pleasure is indeed part of the End, and a *sine quâ non*, but it is not the sole End, for every part of the world and of man's nature has intrinsic worth.

Answer.—Though this objection seems hard to meet because it brings up the difficult question of the relation between different aspects, yet I do not admit it, because I think that in that which constitutes its difficulty is also to be found the key to its solution.

For, looking at the constituents of the world as we know or divine it, and regarding them as apparently parts of an actually existing whole, we are attempting to take an universal point of view, and are certainly not able to pronounce that any of those parts are intrinsically worthless.

But when from the restricted point of view of finite and sensitive (though also rational) creatures, we endeavour to determine what ultimately desirable end can be obtained or promoted by human action, there does not seem any necessary reason why all possible ends of action (for it is with these we are concerned) should be regarded as ultimately and intrinsically desirable. And we may ask, How is the intrinsic worth, which is not Pleasure or Happiness, to be described, and in what does it consist? The difficulty here, I think, is caused by mixing up different points of view, and is evaded, as far as Ethics only is concerned, by separating them again.

In Rational Hedonism, as already pointed out, neither Reason nor the Good Will are ignored. Reason is expressly appealed to, to declare and, if you will, to constitute the End.

Objection 8.—To get Pleasure we must *forget* it.

Answer.—This does not seem to be any objection really, to taking

Pleasure as the *ultimate* end, but only to making it the invariable proximate end; and Rational Hedonism by no means requires us to do this.

Objection 9.—Even supposing that Pleasure were the End, amount or sum of Pleasures is not the End, for Pleasures differ qualitatively, and therefore are not commensurable, and cannot be added.

Answer.—I believe the real source and unfailing prop of this objection to be the difficulty of clearly distinguishing between *Pleasure* and the *Causes and accompaniments of Pleasure*. The Causes of Pleasure are many and varied, but it is only in so far as their effect—concrete Pleasure—has common quality, that the name “Pleasure” can be applied. We cannot indeed in experience *separate* Pleasure from its antecedents and accompaniments, but we can *distinguish* it from other adjacent mental elements, as is perhaps sufficiently proved by our giving it a name. It would be as reasonable to say that because *Death* may result from very various conditions, therefore Death *quâ* Death has different quality in different cases, as to say that Pleasure *quâ* Pleasure, may differ in quality according to its cause. And of course it is only *quâ* Pleasure, that similarity of quality is asserted. If appeal to fact is allowed, it seems clear that men often *do* compare pleasures and pains in respect of intensity and duration. The medical use of palliatives and of sharp remedies, for instance, involves such comparison, and all cases in which uncongenial toil or painful privation is voluntarily undertaken for the sake of a prospective reward. We may perhaps instance here the industrial organisation of Society. The Penal Code, again, suggests a comparison of Pains (at least).

There also seems no room to doubt that in the ordinary forecasting of the future, and deliberation as to alternative courses of action with which men are largely occupied, a weighing of Pleasures and Pains has an important place. We often try to compensate for Pain, or to comfort a person who is in distress, by something which will give pleasure. The Hedonistic calculation is carried out, not indeed with mathematical precision, but, I think, with as much approach to accuracy as, *e.g.*, judgments that one life or action is better than another, or that one scene or one face is more beautiful than another. Are not two happy weeks more worthy to be chosen than one, are not “forty stripes” more to be avoided than twenty?

The difficulties presented by Hedonistic calculations in the case of a single individual, are no doubt increased when the calculus is made universalistic—embracing a consideration of the happiness of Self and of Others. But whatever the difficulties may be, we all go on trying to make the calculation. And though there *are* difficulties, it is no more than the truth to say that we all do know a good deal about the Causes of Happiness to ourselves and others—just as, *e.g.*, we know a good deal about the nutritive, &c., properties of food, although we admit that “one man’s meat is another man’s poison,” that infants require different food from adults, and invalids need other fare than those in robust health; *e.g.*, the laws of any civilised country and the rules of positive morality embody a great deal of knowledge on this subject. And, moreover, these laws and rules have a powerful effect in making *individual* and *general* Happiness coincident. That *for the most part* this coincidence holds in tolerably well-ordered communities seems evident. It is not to be denied, however, that both for practical morality and for Utilitarian theory, the possible and occasionally actual, conflict between self and others is a great difficulty. But if we may believe in the “moral government of the world,” the theoretical difficulty is overcome; and prominent opponents of Utilitarianism declare that the necessary postulate of Ethical Theory and Moral Conduct is the pre-supposition that “the agent who duly satisfies the community in which he shares by that same conduct satisfies himself,” or that self-realisation is only accomplished by self-sacrifice. On any theory the practical difficulty can only be minimised by the growth of individuals and communities in wisdom and benevolence; and on the Utilitarian view, every increase of *Virtue* in the agent means an increase of *Happiness* in others (at least), so that there cannot be an increase of *Virtue* in a community without (*ceteris paribus*) a corresponding increase of Happiness.

Objection 10.—Though Happiness or Pleasure were the End, it would not follow that the attainment of the Greatest Amount of Pleasure possible would be the nearest approximation to the End.*

Answer.—The difficulty or impossibility of attaining any End in

* I have never understood the statement of the End as the greatest possible *amount* or *sum* of Pleasure or Happiness, to mean more, or other, than as much as possible of concrete Happiness in concrete life. I do not know in what other sense those phrases could reasonably be understood.

entire completeness or in full measure, does not seem to be a reasonable argument against the adoption of such an End—the nearest approach to it that is possible for us, may be worth all our efforts. And if we are to reject any End that we cannot hope to attain completely, we should have to reject, perhaps, every End of human action that has been adopted by men. For instance, Perfection, Self-realisation, Virtue, Activity, can never be fully attained by any human being.

Objection 11.—A sum or series of Pleasures cannot be the End, because a sum or series cannot be enjoyed all at once.

Answer.—As time is a condition of human existence in this world, and as we live and act, think and will, enjoy and suffer, in successive and infinitely divisible moments of continuous time, this objection would seem to be applicable to *any* ultimate Good possible or conceivable for men. If every portion of time while present were delightful, and when past or future were remembered or anticipated with delight, what objection could be brought against such a Good of Consciousness on behalf of creatures living and thinking and feeling *in time* (though not in *the present only*)?

Objection 12.—"The pleasure of others cannot be a Good for us if the good is pleasure."

Answer.—A precisely similar objection would seem to apply to *any* Good which is a *Good of Consciousness*, since each Man's consciousness is individual to himself. But to take this particular statement of objection, it may be pointed out that, if the good is pleasure *quâ* pleasure, all pleasure is good—therefore the pleasure of others from an universal point of view, as well as the pleasure of myself from an individual point of view—and though certainly an individual, I am not a mere individual. It is true that if I cannot desire anything but my own pleasure, then I cannot desire the pleasure of others; but if psychological Hedonism is denied (as it is denied by the latest and best exponents of Utilitarianism), then the pleasure of others may be an object of desire to me.* And hence, as an *ethical* end, it is *psychologically* possible. The Hedonist does not put *feeling* into the place of *reason*—but he asks: Granted that there is something which it is right and rational to seek, *what is it?* and failing all other answers, he

* It cannot, I think, be denied that some people do desire the happiness of some others. Admitting this fact, those who say that good is the object of desire must admit that *others'* happiness may be a "Good" to me.

finds the reply: That which is ultimately and intrinsically good is happiness.

Objection 13.—A kind of converse of the objection that “the pleasure of others cannot be the good for us if the good is pleasure,” is the view (put forward, as I understand, by, *e.g.*, Professor von Gizycki) that although the pleasure of others is Good to me, my own pleasure is not Good to me.

Answer.—This is, perhaps, the most curious of all Hedonistic views; for surely it is only if my own consciousness tells me that my happiness is *for me as an individual* intrinsically worth having, only on this condition is there ground for holding that the happiness of *others* is that which, for *their* sakes, it is worth while for me to promote. Why should I think that another’s happiness is any good to *him*, unless I feel that *my* happiness is a good to me? Can I judge his consciousness except by my own?

Again, each individual when aiming at the happiness of *others*, since he does not aim at the happiness of *one man alone*, has to aim at both happiness and virtue (in so far as virtue conduces to happiness) in each. (And, of course, on the utilitarian view, conduciveness to happiness is the very content of virtue.) I think these considerations have some bearing on

(*Objection 14.*) Mr. Rashdall’s objections to Utilitarianism, which are considered and answered by Professor Sidgwick in *Mind*, vol. xiv, p. 486.

Answer.—The supposed difficulty, that Utilitarianism assigns “a different end to the individual and to the race,” might, it seems to me, be better expressed by saying, “a different end to the individual, *quâ* individual merely, and to the individual *quâ* part of the whole,” for there can be no end aimed at by men, and no end worthy of human attainment, except as aimed at and attained in the consciousness of individuals. The conflict (if conflict there be) is a conflict within the consciousness of individuals (as, indeed, Professor Sidgwick points out). It seems to me that Mr. Rashdall’s objection of “a different end” would be more appropriate to the case of self *versus* one other solitary conscious individual.*

* The answers to Objections 9 and 12–14 are taken (chiefly) from an article on “Rational Hedonism,” in the *International Journal of Ethics*, October, 1894.

(3) As regards the competing ends of action which have been suggested, they have to some extent already been incidentally considered. But a few words may be added regarding the end of Self-realisation, and also regarding that ordinary "Common Sense" Morality which has been happily named "Dogmatic Intuitionism," and the still cruder form distinguished as Perceptual Intuitionism.

To take Dogmatic Intuitionism first: it seems that reflection upon the generally received rules of such current morality must bring home to us the fact that this body of Ethical precepts is wanting in the very first condition of scientific knowledge—that is to say, it is wanting in consistency. As Hume first pointed out in detail, we find, however, that all these—sometimes clashing, sometimes obscure, sometimes incomplete—rules are, on examination, seen to be evidently in agreement in respect of their general felicific quality, and (as has been shown in the *Methods of Ethics*) we find it is possible to get both an explanation and a justification, on the one hand, of their partial validity, and, on the other hand, of their inadequacy, by reference to the "Happiness Principle"; and the recognition of this Principle in its connection with the common moral rules, furnishes that "Philosophic" form of Intuitionism which seems coincident with Utilitarianism or Universalistic Hedonism.

As regards what has been called Perceptual Intuitionism, it seems that no moralist of any repute advocates it consistently; and, further, I should venture to question whether any person of ordinary reflection and intelligence would be found to seriously profess it. For by Perceptual Intuitionism is meant the view that the rightness or wrongness of every action is intuitively and immediately perceived without reference to rules or principles; and it is difficult to believe that any person in earnest about doing right can have failed to be sometimes in perplexity as to what is right in individual cases.

With regard to Self-realisation, it must be admitted that the meaning of that term (and therefore the worth of the End to which it refers) must depend entirely on the meaning given to *Self*. It is perhaps partly because in speaking of Self-realisation, the *best* or *rational* self is always tacitly implied, that the name has such a general attractiveness, and appeals to men as an end which carries its own justification with it. But it must be remarked (1) that *until further explained*, Self-realisation is an End too vague to furnish any ethical guidance; and (2) that if the self intended is explained to mean the *rational* self, then, indeed, it is an End which all may accept, but it still remains vague until it has been pointed out *what* it is that is rational, *what* are the characteristics or content by which the rational self may be distinguished from those other elements of the whole self which are *not* rational. It is information on this

point that is wanted—information as to the criterion by which the claim to rationality may in any case be tested. Reason, the Rational Self, must approve its claims to the appellation of Rational by rationality of choice; we require a test or criterion by reference to which the rationality or irrationality of choice in any case may be determined. Reason cannot choose *itself*, and cannot exercise itself in emptiness, any more than the skill of a marksman or a musician can exercise or approve itself without the appropriate means and instruments. Its use and nature are to choose, amid ends and material which are something other than Reason,—but of which some are more, and some less, worthy to be chosen.

Hence if Self-realisation (understood as the realisation of the Rational Self) is offered as an end that takes account of, and satisfies all parts of our nature, it appears that we have simply come back to the point from which we started—the preliminary admission or explanation that Good is what it is reasonable to seek and Right is what it is reasonable to do.

If the phrase “True Self” is regarded as synonymous with “Rational Self,” or as preferable to it, it must be understood that *True* here means *true to an ideal*, not (in its more ordinary sense) *true to fact*.

When the True or Rational Self is explained to mean the *Social* Self, it seems very evident that Dualism of Practical Reason (which Universalistic Hedonism explicitly defines and accepts) is not necessarily eliminated by the adoption of Self-realisation as Ethical End.

SYMPOSIUM—THE FREEDOM OF THE WILL.

I.—By W. L. GILDEA.

By “Will” I mean the rational appetite. There are three forms of appetite—the natural, the sensitive, and the rational appetite. Natural appetite is the tendency of everything towards that which is suitable to its nature. “Everything already in possession of being,” says St. Thomas (*Quaest’ Disput, de veritate*, q. xxi, a. 2), “naturally likes that being and preserves it to the best of its power”; and, in the same article, he quotes Boethius as saying, “Providence has given to created things this chief principle of permanence, that, as far as they can, they have a natural desire to persist in being.” Natural appetite then, is found in man and in all things animate and inanimate. Von Hartmann dignifies this natural appetite by the name of will. He grants the word to the subject which has no claim

to it, and denies the reality to the subject which possesses it. Natural appetite pre-supposes no cognition in its subject. There is no knowledge of the term of the tendency, and still less is there knowledge of the reason of the tendency.

Sensitive appetite *does* pre-suppose some cognition, for it is a tendency to the good thing apprehended by the senses. But the knowledge pre-supposed is imperfect. The thing good to the senses has been apprehended, but the reason of its goodness, or, its suitability to the sentient subject which tends towards it, has not been apprehended. "Some things," says St. Thomas, "are inclined to the good by mere natural tendency without knowledge, and this inclination to good is called the natural appetite. Other things are inclined to the good with some cognition, not indeed that they know the reason of the goodness (*ratio boni*), but they know some particular good thing. The inclination consequent upon this knowledge is called the sensitive appetite" (*Sum. Theol.* pp. q. 59, a. 1). Sensitive appetite is found in man and in the brute creation.

Rational appetite pre-supposes knowledge not only of the thing desired, but also of its desirability, of its suitability to the subject of the desire. "Other things again," says St. Thomas, "have an inclination to the good with a knowledge by which they know the very reason of the goodness, and this is the peculiarity of intellectual natures and this tendency is called the will" (*ibid*).

This paper is concerned only with the rational appetite or will properly so-called.

By "*freedom*" is meant immunity from necessity. There are two forms of necessity, external, or co-action, and internal, which springs from the very nature of the thing necessitated. Hence a two-fold immunity is conceivable, from co-action, or external violence, and from the necessity of nature. It is universally conceded that the act of will is a vital act, and thus, by implication, it is universally conceded that the act of will cannot be the result of external agency. External agency may indeed assist or impede the *commanded* actions of the will, the movements, *e.g.*, which the will commands of the members of the body, but to assign to external agency the *elicited*, or immediate acts of the will, is, to speak in contradictory terms. Immunity, from necessity of nature means that the will is not determined by the constitution of its nature to one part of a disjunction or contradiction.

Freedom from necessity is, however, a negative rather than a positive definition of the will's freedom. Positively this freedom may be defined as the quality by which an agent when all the conditions for willing are present to it may go forth into the act of will or abstain from it. This definition covers immunity from both co-action

and the necessity of nature and involves freedom of choice. Freedom of choice may exist with respect to the *act* of volition, inasmuch as the will is free to wish or not to wish, or with respect to the *object* of volition, inasmuch as the will is free to wish this thing, or its opposite, or some third thing. Hence freedom of choice is divided into freedom of contradiction or exercise, of contrariety, and of specification. Freedom of contradiction or exercise consists in this, that the will is free to elicit or to not elicit some action, *e.g.*, to love some thing or not. Freedom of contrariety consists in this, that the will is free to wish an object or its opposite. Freedom of specification consists in this, that the will is free to wish this thing or that. Freedom of contradiction or exercise is essential to the will's freedom and is sufficient for it. Though the freedom of contrariety and of specification be wanting, provided that the will have the power to wish or not to wish, if it does wish it wishes freely. It is of the freedom of contradiction that I speak when I defend the freedom of the will. Before proceeding to this defence, I must indicate certain restrictions of the will's freedom. (1) The will is by the necessity of its nature impelled to the desire of what, for want of a better phrase, I will call *goodness or happiness in general*. It may be indifferent by its nature with respect to this or that good thing, as the organ of sight is indifferent by its nature to the vision of this or that visible thing; but just as the eye cannot perceive a thing unless it be presented as a *lucidum coloratum*, so the will cannot desire a thing unless it be presented under the aspect of *good*. With respect then to *goodness in general* the will has no freedom. Goodness in general, or suitability to the nature of the subject of the volition is the *formal object* of will, just as *lucidum coloratum* is the formal object of sight. (2) If an absolutely perfect good, apprehended as such, be presented to the will, the will has no freedom of choice with respect to it; it cannot help desiring it, for such an object would leave no possibility of desire unactuated. But an object like this comes as little within the scope of the present paper as within the apprehension of the present life. Freedom of will then exists not with respect to *goodness in general*, nor with respect to the *universal* good, but only with respect to individual things which present some aspects of goodness, *bona particularia*.

(1) The first proof of the will's freedom is found in the clear, unmistakable testimony thereto of consciousness. So clearly is our freedom witnessed to by consciousness that it is difficult to conceive how a man can question it without becoming a sceptic in everything. If I am not to believe my conscience when it tells me, as it so emphatically does, that I act freely, then I have no reason to believe it when it tells me that I exist, or that I necessarily decide that two

and two make four. All reasoning, or intuition, assumes the validity of the testimony of conscience. Accept the word of conscience then when it proclaims the freedom of the will, or reject it everywhere and become a universal sceptic. I admit, indeed, that many of our actions are performed spontaneously, mechanically, and by force of habit. I admit again that many actions that are freely performed are performed without advertence to their freedom. I further admit that my inherited and acquired tendencies strongly urge me to adopt course of action A, and to reject course of action B, and that unless I put forth much antagonistic effort these tendencies will carry the day. But I am as certain as I am that two and two make four that I can check these tendencies and act in direct opposition to them, and, if I fail to do so, I am distinctly conscious that the omission is as imputable to me as would be the putting forth of effort. Indeed, it is in the putting forth of effort in opposition to the appeal of natural and acquired tendencies that the supremacy of the will is most fully realised. The man's better self is aroused. He refuses to be passive any longer. He measures his strength against allurements and temptation and vindicates the authority of the sovereign will. I cannot always control myself externally. I may grow pale in presence of danger, much as I may wish to conceal the signs of fear. I may faint if news of some great misfortune suddenly reaches me, much as I may desire to bear up manfully against the affliction. But the will, the desire of my higher nature has ever been a free will and a free desire. Of course, as St. Thomas points out, pleasure and pain and fear may be of such intensity as to place, for a time, the reason in abeyance. But such intensity of pleasure and pain can occur but rarely. It has never occurred to me. I am conscious that whenever I have acted after a deliberate balancing of motives I have always acted freely. I could not possibly have a more distinctive consciousness of this freedom than I actually possess. If others are not equally free I am sorry for them. When it is a question of consciousness each one must speak for himself. But others have spoken on our subject; and this leads me to my second proof of freedom, the general consent thereto of mankind.

(2) General conviction has an exceptional value here. We are dealing with a question which as much as any question has to be decided by consciousness. Thus general conviction upon one matter is equivalent to indefinitely multiplied testimonies of consciousness. Here is no case of *Quot homines, tot sententiæ*. Mankind as with a single voice proclaims the freedom of the will. The Legislator makes laws for the people whom he governs, and his laws suppose the freedom of his subjects. Nations meet together in council, and

the treaties they draw up again suppose freedom. Private citizens make their contracts, and their contracts are based on the conviction of freedom. But to spend time in proving this general conviction is to waste time. Who has ever questioned that this belief is general? But though general the belief is not absolutely universal. There have been some who have questioned the freedom of the will. But these can scarcely refuse to admit that they are opposing the testimony of their consciousness. At least, they will not venture to assert that they are led to their conclusion by the testimony of their consciousness. They have their arguments, no doubt, but their arguments are not likely to prevail against common sense and consciousness. The Idealist would persuade me that the paper on which I write has no extra subjective existence. His reasonings are very pleasant to listen to; but I see the paper there all the time. And the materialist would persuade me that I have no freedom; but I am conscious while I listen to him that I am free to walk away and leave him to waste his eloquence on the desert air. He holds his opinion more or less tenaciously, but I question whether he would risk a bet on it. Materialists were once discussing our subject with an advocate of freedom. "Let us bring matters to a practical issue," said the advocate of freedom. "Of the two contradictories, 'I shall sing in five minutes' time, I shall not sing in five minutes' time,' choose which you please as the true vaticination. If you decide that I shall sing, I will bet you a hundred to one in sovereigns that I will not. If you decide that I shall not sing, I will bet you a hundred to one that I will. You surely will not refuse to make a bet. The refusal would be an admission of my consciousness of freedom, and a recognition that my consciousness is justified." The materialists silently filed out.

(3) A third proof of the will's freedom may be called the ethical proof. It is not within the scope of the present paper to establish the distinction between right and wrong. But I may fairly assume a distinction which is almost universally granted. Not all, indeed, would agree upon the essential nature of the distinction. But there are few that do not regard the right as something which, for whatever reason, *ought* to be done, and the wrong as something which, for whatever reason, *ought* to be avoided. Now, to deny the freedom of the will is to deprive the word "*ought*" of all significance, and to treat responsibility and moral obligation as idle terms. As Kant rightly decided, moral obligation postulates freedom or has no existence whatever. If you act not by choice but by necessity why permit yourself to experience remorse for the wrong consciously done; or, rather, how is it that you are harassed by remorse and cannot get yourself quit of it? Why distinguish between the

madman and the criminal, or, rather, explain how it is that you cannot help making this distinction: explain how it is that your conscience would reproach you if you inflicted capital punishment on the madman who commits a murder, while the same conscience would decide that you had acted well if you put to death the man who committed murder when in full possession of his senses. Disprove the freedom of the will and your victory is a triumph over the moral order. But why throw over the moral order for the sake of denying freedom? Is the doctrine of the freedom of the will and consequence of doctrines that are doubtfully established? Has it consequences of its own that are absurd? No; it is a truth of immediate consciousness, and to question it is illogical while any truth is granted. The contrast of the madman and the criminal which has just been mentioned leads me to what is commonly regarded as an explanation of the freedom of the will, but may also, I think, be regarded as a further proof of it.

(4) The *subject* of freedom is the will, but the *cause* of freedom is the *reason*, "for the will can be freely inclined towards diverse things, *because* the reason can have diverse conceptions of goodness" (1, 2, q. 17, a. 1); that is to say, the will is therefore free with respect to "*bona particularia*," because the reason can judge freely, in this way or in that, concerning them. *Bona particularia* have their aspects of goodness, but they have also their aspects of evil. They are good from one point of view, but they may be bad from another. They are pleasant to the taste, but, it may be, dangerous to the health; good for the lower nature, but only to be acquired at the expense of the higher; good, but incompatible with some better and higher good; good, but difficult of attainment and of uncertain tenure when possessed. "In all particular good things" (1, 2, q. 13, a. 6) "the reason can consider the presence of some goodness, and also the defect of some goodness, and this has the aspect of evil; and, in consequence, it can apprehend every one of these things either as eligible, or as a thing to be avoided. Only the perfect good, which is happiness, the reason cannot apprehend under the aspect of evil, or of any defect. And therefore, from necessity, man wishes for happiness; nor can he wish not to be happy or to be miserable. But election since it is not of the end, but of the means to the end, is not of the perfect good, which is happiness, but of particular good things, and therefore man elects not from necessity but freely." It is from its perfection that the reason is able to detect the ineligible aspects of particular good things. From its want of perfection, its ignorance fails to perceive the complete eligibility of what conduces to the acquisition of the supreme good. "Just as the intellect" (1, q. 82, a. 2) "naturally and of necessity adheres to first principles,

so also the will to the last end. Now there are some intelligible things which have not a necessary connection with first principles, *e.g.*, contingent propositions, the denial of which is not followed by a denial of first principles; and to such the intellect does not of necessity assent. But there are some necessary propositions, which have a necessary connection with first principles, and such are demonstrable conclusions, the denial of which involves a denial of first principles; and to such the intellect of necessity assents, when it knows by the deduction of demonstration the necessary commission of the conclusions with the principles. But it does not of necessity assent before it knows by demonstration the necessity of the connection. Similarly with the will. There are some particular good things which have not a necessary connection with beatitude, inasmuch as one can be happy without them; and to such good things the will does not of necessity adhere. And there are some that have a necessary connection with happiness, inasmuch as they bind man with God, in Whom alone true happiness is found. Nevertheless, before the necessity of this connection is demonstrated by the certitude of the beatific vision, the will does not of necessity adhere to God or to the things which are of God."

I should like to say something on the relation between the will and the last practical judgment of the intellect. But my paper is already sufficiently long, and the point in question will no doubt be discussed in the debate which follows the reading of the papers.

II.—By W. H. FAIRBROTHER.

The question of the nature of the Will, in addition to its direct inherent difficulty, suffers from an extra, accidental, but very real, complication. The Will is emphatically a psychological fact—if it be a fact at all—and should be dealt with by psychology; but if we ask our recognised guides in this department for a definite utterance on this subject, we are met by a blank non-possumus. "The question of freewill," we are told, "is insoluble on strictly psychologic grounds" (*v. James' Psych.* II, p. 572)—a statement plain enough and intelligible but distinctly disconcerting; nor does the corollary attached to it add to our comfort. The longer one looks at it indeed the less one likes it; for it seems to divorce irremediably the intellectual and the practical life. As citizens we act upon the assumption of responsibility, but as contemplators of truth we see no justification for the belief. It becomes a matter of faith—a faith which does not supplement but contradicts our science—a faith which corresponds literally to that historic definition of it as

"believing what we know to be untrue." The writer I have just quoted (Professor James) admits this frankly.

Freewill "is a moral postulate about the universe, the postulate that what ought to be can be, and that bad acts cannot be fated, but that good ones must be possible in their place." The "scientific and moral postulates war with each other, and objective proof is not to be had" (*Psychol.* vol. II, 573).

Psychology thus fails us, though it is rash indeed on that ground to declare the question insoluble, and still more irrational to confuse "insolubility" with "answered negatively." The problem is at least left open, though direct proof (or disproof) be impossible, and surely it will be time enough to fall back despairingly upon a "moral postulate" when all other alternatives have been thoroughly tested. That will not be to-morrow or the day after, but in the meantime we shall be wise, I think, to face honestly the fact that direct psychological investigation holds out no hope—one way or the other.

We turn to Logic, or Metaphysic. The latter must be ultimately our court of appeal in this as in all other cases, but it is not fitting to take the question so far back in a paper of this kind. I would rather suggest that by using ordinary methods of inference upon admitted facts of experience, in blissful ignorance of "inhibitions" or "explosions," we may clear the problem of many ambiguities and obscurities, save ourselves and our adversaries much beating the air, and possibly advance a step or two on the right road.

Logic admits of application by both sides and in various ways—some of them much less helpful than others. An obvious and very common method is to take a technical expression of your opponent, understand it in your own way and then prove conclusively that his theory will not account for the facts. If his definition be carelessly worded, or not sufficiently qualified, you may be able to convict him actually out of his own mouth. It is needless to quote instances—they make up the bulk of the literature of the subject—but it is important to note (as a warning) how very seldom the technical terms are adequately defined and how unconscious the controversialists seem to be of the omission. I do not say this as a cheap score over anybody, but because it forms the chief stumbling-block to my efforts to follow the application of logical method—as opposed to psychological analysis—to this question in recognised writings on the subject. It might be argued, *e.g.*, not flippantly, but in all seriousness, that my reading here to-night is proof conclusive of the insufficiency of the "strongest motive" theory of action, and a pregnant illustration of the result of Freewill. No one can fail to see the "inadequacy" of conceivable motives tending to determine me in this direction, or the all-prevailing strength of the obvious

motives determining me otherwise. The subject is thorny and difficult to a degree, the audience competent and critical, the reader painfully conscious of inability. No reasonably healthy organism but must shrink from such an ordeal and tremble at the prospect of loss of reputation sure to befall him who tries to explain to others what he does not understand himself. Pathology might conceivably explain away this instance, but cannot account for hundreds of similar ones, and we are left with the only possible alternative—the initiative effort of a will which, in defiance alike of Reason and Desire, urges to self-sacrifice. On the other hand, the same facts might plausibly be taken as justifying an exactly opposite conclusion. No personal agent with intelligent comprehension of the circumstances, could choose for himself what is so obviously not his proper and personal good. Only a morbid passion for notoriety or some other irresistible force external to the real self of the patient is conceivable as a satisfactory explanation. Disease or fate—it must be one or the other—and either is inconsistent with freedom of choice in any intelligible sense of the term.

Logic applied in such unanalytical, unscientific fashion as this cannot help us. We must try again. The facts which need explanation are assuredly movements on the part of living animals, or may at least be so regarded to start with. What is the simplest explanation (or explanations) we can give of these movements? Some of them strike us at once as “out of our power”—the tremor of the eyelid, *e.g.*, at a coming blow. They are not peculiar to man, still less to exceptional men—men of “strong will” or “superior intelligence,” or the like. They are called “reflex,” and the verdict may be accepted. On a higher level stands a class of movements which seem to be accounted for as direct responses to perceptive stimulus. A certain idea holds the field, a definite movement follows. It is easy to account for the facts by supposing that a sense presentation, or it may be a mental image, not interfered with, for the moment, by a conflicting idea, prompts to a certain movement or (if we may borrow a phrase from psychology) discharges itself unimpeded in a given direction. Illustrations are innumerable: a saucer of water placed before a thirsty dog draws the head irresistibly towards it; the striking of a school clock paralyses the hand which up to that moment was making such interesting use of a piece of chalk on a blackboard and damps instantaneously the eager intelligence which the audience were displaying in regard thereto. In these cases we are able to prophesy a definite movement with the greatest nicety; and is not this power the essential characteristic of science dealing triumphantly with subject-matter which has no contingency or variability but is definitely determined in all its being? Do, however, these

two classes of movement exhaust the list? No. We see exceptionally perhaps but yet frequently actions which are not reflex, which do not respond to any obvious stimulus, which baffle prophecy and which cannot be the outcome of habitual association. Association or habit is a grand card to play, but ultimately rests upon what used to be called "the instinct of self-preservation," and some actions take us not blindly or impulsively, but consciously, deliberately, slowly, by a process which may last days, to death—suicide, *e.g.*, by starvation, as we read of it in the closing years of the Roman Republic. Here we have something confined to a few exceptional minds and untrue even of them if, when during the process of dissolution the intellect becomes temporarily clouded, their friends treacherously placed tempting morsels in contact with their lips. Self-preservative instinct insured the swallowing of the food, but some other principle is needed to account for its deliberate rejection. Does not this prove that Freewill is a fact; that in its full strength it exists only in exceptionally gifted natures; that it probably does exist in some degree in all; that if we give proper value to this conception of degree we find a plausible answer to the two old questions: "Why, if you pile on the agony enough, is the man sure to yield?" and "Why in the vast majority of men can we account for every action from the cradle to the grave?" *Degree!* think steadily of *degree*, and we see how both Voluntarian and Necessarian are partly right, partly wrong. The former are justified in asserting the existence of Will and its power in certain cases. They forget that these cases are few; that in the mass of men the point at which temptation overpowers its resistance is very soon reached; that character is practically moulded by external environment; that if we know the circumstances we can almost always foretell the result. The latter, confining their attention too exclusively to habitual daily actions, and dwelling too much on the all-absorbing interest most men have in acquiring the necessities of life, ignore the comparatively few cases and the few men, in regard to whom their cheap and easy theory breaks hopelessly down.

By employing judiciously the "Method of Residues," and remembering happily that difference is not of "kind" only but also of "degree," Logic has spoken more plausibly than in our first attempt, but yet perhaps not convincingly. The Determinist is ready at once with two (at least) objections: (1) the case for Freewill is only made out dialectically by means of biological assumptions which, in the form stated, he declines to admit; (2) that the inability to prophesy with scientific certainty is a mere accident of my knowledge. When I know the circumstances I can prophesy; if I knew them in these apparently exceptional cases I could also prophesy. Your "difference

in degree" admits of a much simpler and truer explanation. There is, indeed, a vast difference in degree between a hungry man snatching instinctively at a piece of bread and a Roman noble refusing food until the end comes; but the difference is one of complexity of circumstance, not in the strength of a mysterious and imaginary Will. It is, in truth, hard to get at the inner workings of the mind, so is it also to learn the course of a planet, but science is gradually completing the task in both cases.

At this point the Voluntarian, in despair, raises the previous question. "I will," he says, "for argument's sake, grant that my inability to prophesy is due to my want of knowledge. I will, if you wish it, look forward to a time when I shall know you so thoroughly as to foresee your every action, even to the fallacies which you will put forth in our next discussion on this subject; but how does that knowledge take away your responsibility or affect your freedom? Action not only tends to produce character, it is also itself due to character. If I know in a given instance what the right thing to do is, and am aware of the goodness of your character, am I not able to prophesy exactly what you will do? and does my knowledge destroy either the goodness of that action or its existence, change you from a man into a machine?"

We are getting beyond the limits I set myself in this paper. The last argument raises a question—almost an ultimate question—of Metaphysics. Doubtless all roads lead us there in the end, but some of us do not wish to travel so far to-night. I would suggest that good work may be done by the simple statement of certain points on which we may all (perhaps) agree, and by bearing which in mind we may save ourselves much needless controversy.

(1) In the first place, that will is not independent of motives is now almost a truism. "Unmotivated Will," if not a contradiction in terms, is practically unthinkable, and has no evidence in fact. It is never equally easy for a man, at a given moment, to move in any direction, nor can it seriously be maintained that any action, however capricious, is really arbitrary.

(2) Secondly, we may surely agree that if Will is a separate Faculty, in the technical sense of the term, freedom is impossible. Such language is misleading in the highest degree. Man cannot be an aggregate of different co-ordinate faculties for the obvious reason that, if he were, he would not be a man at all. Nor, if he is an Ego, distinct from or behind his faculties, are we any better off in our present reference. The separate faculty is not "he," and by its kinetic energy he is as much "moved" and "determined" as he would be by external force pure and simple. The question, if it is to be argued at all, cannot be formulated in the words "Is there a

faculty called Will?" but "Does the mind will freely?" or (perhaps) "Is the man free?" The Will is emphatically the man *ἐνέργεια*, willing is an operation he performs; the question is, can this operation be, or not be, explained as a product determined by forces independent of the man himself?

(3) It may further be admitted that acts may cease to be acts and become, to all intents and purposes, reflex movements. Most determinist theories, with which I am acquainted, rest upon this fact *plus* the assumption that these movements have never been anything else. The fact we may admit, but the assumption, as such, is surely gratuitous. In the days still recent, when I was an innocent Freshman, and thought all Nature's secrets would be revealed by just a little looking into, I used to notice carefully a small knot of workmen whom I frequently passed on the way to the river, exactly at two o'clock in the afternoon. Most of them were smoking, and, after a day or two's observation, I was able to prophesy exactly what each man would do with his pipe when the first stroke of the hour fell on his ear. They all did different things, but it is needless to weary you with detail. The point is that the same individual did exactly the same thing whether he were talking at the moment or silent, quiet or excited, strolling about or sitting still. The movement was apparently conscious sometimes, sometimes unconscious, but in either case unaffected by consciousness. It had become habitual and practically reflex. I say "become" advisedly, because while the assumption that it had always been so is an assumption, there is evidence for a different interpretation in the fact that the different movements admitted each of a rational justification—they differed not arbitrarily, but because the ends apparently sought were different.

(4) May we further agree to drop the word "instinctive," and cease to explain movements by "instinct"? It is a blessed word well suited to give temporary rest to the tired enquirer, but certainly not calculated to further him on his road. Any meaning it may have is purely negative; any application that may be made is always to beings who are *not* ourselves.

Green (*Proleg.* § 92) is incontrovertible here. "If we have to explain what we mean by instinct and instinctive action, we have to do it by excluding the essential characteristic of our own motives and motived action. By an instinctive action we mean one not determined by a conception, on the part of the agent, of any good to be gained or evil to be avoided by the action . . . clearly it is nothing but our knowledge of what . . . motived action is, that gives a meaning to the negation conveyed in the description of another sort of action as instinctive."

(5) Let us make up our minds clearly as to the sense in which we will use the phrase "strongest motive." Its ambiguities are manifold; not only as between different authors, but sometimes also in the same treatise. If it is to include will, as it does, *e.g.*, in Green, the statement, "action is determined by the strongest motive," means something diametrically opposed to the meaning it has on a Determinist's lips. But even this Determinist is not always consistent in the use of the phrase. It ought to mean, I suppose, that external force which at a given moment is *μάλιστα κινήτικον*, exercises a greater amount of pressure or attraction than any other inducement. Does it always mean this? Do we never find it applied in a way which savours suspiciously of *petitio principii*?

(6) Lastly, I would point to a fact of our consciousness which is not easily explained on any other assumption than that of Freedom. We have every temptation, when we fall into wrong-doing, to get out of the unpleasant consequences by a plea of irresponsibility in some form or other. We generally yield to the temptation up to a certain point but never beyond that point. We make excuses, we plead provocation, we suggest momentary yet uncontrollable impulse, and so forth, but we never, in all these efforts to avoid punishment, deny our causal responsibility for the act. On the other hand, when the "act" imputed is definitely not an "act" but a "movement," when, that is, we are conscious of ourselves as having been an instrument, not an agent, we never attempt any excuses—we simply explain the fact. The distinction between these two kinds of cases is radical. How is it to be accounted for?

III.—By HENRY STURT.

I am happily able to agree cordially with the main conclusion of the two preceding papers. They both uphold the freedom of the will. In support of this view I offer a few further considerations which I hope may tend to clear up some difficulties which beset the question. The proposition we would like to prove is that the acts of our volition are free, not determined. Now this form of putting the question involves two assumptions: firstly, that our will can act; secondly, that such a thing as free action is possible. As neither of these two assumptions is universally admitted, I will say a word or two in support of them.

To take the second assumption first.

Where do we find any instance of free action or free causation?

If one asked a man: "Are natural events free or determined?"

he might possibly answer on the spur of the moment, "Determined, certainly; rigidly determined by invariable natural laws." But I think this would be an over-hasty answer. For where are we to find these invariable laws? It would be difficult I think to point to any such, even in Logic and Mathematics. In Logic the Law of Identity for example, means, if we come to think of it, no more than that our experience is, on the whole, slow and consistent in its changes. The proposition A is A is merely a shorthand form of saying that an object, while we contemplate it, does not, as a rule, tumultuously transform itself into something quite different, as in a troubled dream. Nor have the laws of mathematics in any greater degree the quality of absolute necessity. They are only real so far as they have concrete application; and they are only true in concrete application in respect of the more exact perceptions. The proposition one and one are two, is true of the eye, when the eye sees clearly; but it is not true of the less exact sensations of the body; still less has it any absolute metaphysical truth.

But the "invariable laws of nature," which we are considering, may be used in a general sense, as equivalent to the Uniformity of Nature. Many scientific men speak of the doctrine of the uniformity of nature as so intensely axiomatic that a single instance to the contrary, however microscopic, would, so to speak, burst the intelligible world to pieces so irremediably that our intellect could never re-compose the fragments. A short consideration, however, will, I think, convince us that this is no axiom at the most, nothing more than a somewhat plausible hypothesis or prophecy. It cannot be conceded that the same causes *must* produce the same effects; for the simple reason that the same causes never occur twice. Up to the present experience has shown that water freezes at 32°: this freezing-point may remain constant to the end of time; but there is no *à priori* reason why it should. In fine, the uniformity of nature, together with the laws of Logic and Mathematics, are judgments of experience; they cannot be considered as invariable laws.

Nor even if invariable laws did exist could one imagine how they could determine phenomena. For if immaterial, in what extra-phenomenal region could they be situate, and how from thence could they operate upon phenomena? While, if they are phenomenal and material, we must suppose that there is one set of phenomena (the laws) which are purely active, and another set, the things they govern, which are purely passive; and that another phenomenon, Force, leaps out from the active into the passive and sways them. And this conception is, I take it, for many reasons, unthinkable. In short, we ought, instead of laws of phenomena, to speak of uniformities of phenomena. And moreover, no phenomena are purely active

or purely passive. The members of the natural world are, each and all, both active and passive sympathetically. The whole system is, in other words, alive. Thus, instead of saying that natural events are rigidly determined by invariable laws, we ought rather to say that they form part of a system which freely determines itself.

We have so far dwelt on the spontaneity of nature; but we must not lose sight of its systematic aspect. Marvellously uniform it certainly is. We could not imagine it as changing irrationally and violently like the phantasmagoria of a dream. But the system which holds it together is not a mechanical necessity, but, so to speak, an inter-connection of propriety, an organic relation. One may illustrate from the fine arts. A good organ fugue is most intimately and vitally connected through all its parts. But the parts do not succeed one another in virtue of any ordinary, mechanical, cause-and-effect necessity; they are subordinated to a certain unity of conception, a certain emotional purpose. Such, or something like it, the true inter-connection of things might appear if we could see them in their entirety.

These considerations, I think, will justify our assumption that free action is possible, nay, in a sense, the only kind of action possible. We may call the natural world determined, but its determination is from within; while, if we call it free, it is the freedom of an orderly system.

Now we will take up our other question. Can man's volition act in the phenomenal world? This, indeed, is the point where so many inquirers stumble. They suppose personal spontaneity to be excluded by the invariable laws of nature; nor can they allow that an immaterial non-spatial thing like soul or spirit can act in the world of space and matter. It does not, however, require much idealist criticism to show that no impassable barrier can be set up between the spiritual and the material world; while the foregoing remarks, if correct, have settled the question of the existence and constraining influence of the invariable laws of nature. One very prominent so-called law, I may add, the Persistence of Force, is, one is inclined to think, not a law at all, but a somewhat fanciful imagination. The soul, then, has as much right to act in the world as anything else; in fact, a great deal more if we adopt the full idealist position. For if a Something analogous to the human soul is the active constitutive principle of the Universe, it would be strange indeed if human souls were the only things in it which are entirely passive. We conclude, then, as consciousness testifies that our will does act, that testimony is to be received; the reasons alleged in opposition proving illusory.

Our conclusion, then, so far is that, even if the soul is just on the

same footing as the other facts of the world, it has a right to be called free; since, like them, it is part of a self-determining whole. But this is not the real pith of the feeling of free-will. To satisfy this feeling we must be free as individual personalities, not merely as part of the world around us. So far we have been defending free-will against the Materialist; but if we pursued the matter to the end, we should have to deal with far more serious difficulties on the idealist side. It is not so hard to imagine an omnipotent spiritual principle which freely develops itself as the world we know; the difficulty is to find room in this world for the freedom of our own finite spirits. I believe the two preceding papers have not approached this question; but till it is grappled with, we are, so to speak, merely hovering round the vital controversy. I do not propose to offer a solution, but should like to say a word or two to indicate the nature of the problem. After what I have said above, I will take it for granted that the Universe outside our finite personal selves is a system; a system of elements wherein every element is related to every other and none is active or passive solely, but all are both active *and* passive sympathetically. Now the question arises, Are our own finite spirits external to this system, or are they included in it? Surely they are included in it; for otherwise, how could they come from outside of it and act within it? And yet, on the other hand, we cannot think they are dominated by it in the same way as the lifeless things of nature. A man is something more than a statue. He has a certain independence in the face of the Universe—a private centre of feeling and enjoyment, of thought and of volition. Now I feel sure that the problem of free-will postulates equally these two conditions, viz., the relative dependence and the relative independence of the finite spirit in relation to the Universe; but at the same time I admit that it is difficult, perhaps impossible, to offer any solution which combines them and can be expressed in definite scientific terms. I can only turn once more to art for an analogy. The organ fugue, which I instanced before, possesses, as a whole, a unity and beauty to which every part contributes; but which is not the effect of the mere aggregation of the parts. But though the fugue is one, and though its unity is supreme, still the parts individually are not without a unity and beauty of their own. The whole, in which they have their being, does not obliterate their individuality, though it envelops them and makes them its own. By some such simile as this we may picture the relation of the finite will to the Universe—a relation which *scientific* terminology may be inadequate to express. But this statement does not exhaust the conditions of the problem. We have to take account not only of the independence or quasi-independence of the human will, but of its

positive opposition to the Universe. The parts of the fugue unfortunately do not fall into one harmony; some of them are in painful discord with the others, and with the whole. In other words, our wills can not only act freely, and to a certain extent independently; they can also act wrongly, and in plain opposition to what men generally consider to be the purpose of the Universe. With this last condition added—i.e., the possibility and prevalence of Sin—the problem of Free-Will seems to me more or less complete. How can it be imagined that our Wills are dependent on the Universe, independent of the Universe, and disobedient to the Universe? That is the question which men ask, and I hope the discussion may suggest some answer. I should like to add one word more. It does not seem to me that disobedience is necessarily involved in independence. We see sometimes in ordinary life men working under a chief who are absolutely in sympathy with him. They are not tools in his hands; their wills are their own, and yet they never act in opposition to his. In such cases the question of disobedience and subordination never arises. Their unity of feeling lifts them into another and a higher plane. And in the same way, if a finite spirit could understand and fully sympathise with the purpose of the Universe, the free-will question would be practically settled. The inferior would be wholly at one with the superior, without losing his individuality and independence. And till some scientific solution of the free-will problem has been reached, the possibility of a solution of this kind is what will continue to satisfy those who look at this question from the practical or religious side. Freedom is merged in loving aspiration.

RELATIVE SUGGESTION.

By G. F. STOUT.

§1. *Unconscious Inference.*

SOME of our most distinguished modern psychologists have shown a strong disposition to recognise in the elementary processes of perception and association the rudimentary presence of those mental operations which in their higher form recall reasoning and constructive imagination. Helmholtz, in particular, has emphasised the inferential or ratiocinative nature of those judgments of size, shape, and distance, which form essential constituents of our visual perception of space. In such perceptions we have, according to him, an analogue of the syllogism. The major premiss is the cumulative

result of a series of experiences which in their particularity have vanished from memory. The new sense-impression which emerges in the present perception forms the minor to which the rule registered by previous observation is applied. This psychical process he holds to be operative from the lowest to the highest stages in the development of our mental life.* James criticises this view as follows:—"If, every time a present sign suggests an absent reality to our mind, we make an inference; and if every time we make an inference, we reason, then perception is indubitably reasoning. Only one sees no room in it for any unconscious part. Both associates, the present sign and the contiguous things which it suggests, are above board, and no intermediary ideas are required."† "Our rapid judgment of size, shape, distance, and the like, are best explained as processes of simple cerebral association. Certain sense-impressions directly stimulate brain-tracts, of whose activity ready-made conscious percepts are the immediate psychic counterparts."‡ Now it may be admitted that this criticism is justified as against any attempt to find a formal parallel between the process of perception and a logical schema such as that of the syllogism. The absence of the major premiss is sufficient to vitiate the supposed analogy. But the major premiss certainly is absent as such; it is certainly not present for consciousness; and the assumption of Von Hartmann that it has an unconscious existence, is, at any rate, devoid of all psychological justification, however we may regard it from a metaphysical point of view.

It does not, however, follow that the perceptual processes which Helmholtz has in view are fully and accurately characterised as "simple cerebral associations." What is questionable in this formula is the word "simple." If this means that the working of association in perceptual process is merely reproductive, the statement of James covers a fallacy. Psychologists in general show a tendency to ignore the constructive aspect of mental process in its lower phases. They recognise mental productiveness only in complex and advanced stages of development. Thus in Bain's *Senses and Intellect*, out of the 306 pages devoted to the Intellect, only the last 42 deal directly with what he calls "Constructive Association." Throughout the whole of the preceding 264 pages he has in view "the literal resuscitation, revival, or reinstatement of former actions, images, emotions, and trains of thought." This procedure appears to us to be founded on a false view of the nature both of Association and of Construction.

* *Die Thatfachen in der Wahrnehmung*, pp. 26, 27.

† *Psychology*, vol. ii, pp. 111, 112.

‡ *Ibid.* vol. i, p. 169.

§2. *Mental Productiveness in General* (1).

The ultimate root of Professor Bain's fallacy has been laid bare by Mr. Bradley. It lies in the tacit assumption that Association is a link between particulars as such. On this view, when the sight of a particular piece of sugar suggests sweet taste, what happens is as follows. In the past we have experienced a particular sweet taste in connexion with the particular visual appearances of particular bits of sugar. When now I see a new bit of sugar, the association which revives the sweetness is that between the preceding particular past experiences, as such. Hence it is assumed by Bain that the piece now seen must first reproduce the particular visual appearance of past pieces before it can resuscitate the sweetness; and also, that the sweetness actually revived is a particular sweetness which has been previously experienced. It is obvious that in this process there is absolutely no room for mental construction. The process is essentially one of literal resuscitation. If there is any novelty in the new product, it is the result of accident due to obliviscence, &c. But the process, as described, is a sheer impossibility and absurdity. The only particular which is actually operative is the given particular. It is this special piece of sugar as seen by me at this special moment which recalls the sweet taste. The past particular experiences of other particular bits of sugar no longer exist, and therefore cannot operate. If *per impossibile* they did exist and operate, they would not account for the actual result. What is suggested is not past particular experiences of sweetness, but the idea of a new particular sweetness connected with the present bit of sugar. This sugar suggests this sweetness. The special conditions included in the word "this" enter into and modify process and result. If the sugar seen is beyond my reach, then the sweetness suggested is a sweetness beyond my reach, although in all my past experiences the sugar may have been easily attainable. If it be a bigger piece of sugar than I have before had experience of, I anticipate a more extended enjoyment of its sweetness.* To take another example: Professor Lloyd Morgan tells a story of a little boy who, "after gazing intently at a spirited picture of a storm at sea with a ship being struck by lightning, asked, 'Mother, why doesn't it rumble?'" Now what kind of a rumble was in this case actually suggested to the boy? Was it anything in the nature of a literal reproduction of any thunderclap which he had ever heard? If he had heard an

* See F. Bradley's *Principles of Logic*, Bk. II, Pt. II, ch. i. Readers who are not already familiar with this chapter, are particularly requested to consult it if the above condensed statement does not appear to them perfectly transparent and evident, and also important.

actual peal of thunder at the moment this would have fitted itself as a natural complement of the painted scene. If his mother had told him that painted lightning could only be accompanied by painted thunder, the answer would in all probability have appeared to him a satisfactory one. But the point of it would have lain in the modification of the process of reproduction, by the special features of the datum from which it starts,—special features which, as such, have never been associated with the idea suggested. In this case the idea suggested is an absurdity; but this does not affect the general principle.

As against the Particularism of the Associationists, Mr. Bradley lays down the axiom that "Association marries only Universals." In other words, the connexion which is operative in the process of revival is not between atomic particulars as such, but between general elements of content which they have in common. This principle is inseparably correlated with another, which requires to be specially emphasised in view of our present topic. We can only understand mental construction when we bear in mind that any actual reproduction is the work of the present psychological datum. The special features of this give a special embodiment to the pre-formed general connexion. Before inquiring into the manifold modes in which this can take place, we must investigate some other associationist fallacies, with a view to bringing into yet clearer light the essential nature of mental construction.

§3. *Mental Productiveness in General (2).*

The fundamental fallacy of the associationists, as exposed by Mr. Bradley, lies in their bias towards psychological atomism. Behind this tendency there lies an obstinate disposition to explain the nature and existence of a whole exclusively by reference to the nature and existence of the parts which are combined in it. From this point of view they must be supposed to pre-exist before they are combined, and to pre-exist in such a way that they need only to be in some undefined manner externally brought together or associated in order to constitute the whole which contains them. Thus in psychology, if we push this mode of explanation to its logical limit, we shall find it necessary to assume implicitly or explicitly a plurality of separate and independent existences, which, being shuffled sufficiently, give rise to all mental combination and composition.

From this primary fallacy there flows three derivative errors, which go far to vitiate the associationist doctrine of the productive aspect of mental process. The first of these is the exclusive emphasis which it lays on mere combination. The novelty of a mental con-

struction is made to consist entirely in the meeting of elements which have not been conjoined before. Thus Bain says: "The new combinations grow out of elements already possessed by the mind, and brought to view according to the laws already laid down."* These laws are the laws of "literal resuscitation, revival, or re-instatement."† As against this view we advance the counter-proposition that every new synthesis results from the further determination of a psychical whole which in some way already pre-exists. The new synthesis consists in the distinction and definition of the parts and relations within this prior whole. To regard it purely and exclusively as a synthesis involves no less an error than to regard it purely and exclusively as an analysis. It is like the shuffling of a pack of cards; the various combinations which take place pre-suppose the general and relatively indeterminate combination, in virtue of which the cards constitute a pack at all.

In the second place, there is a complete failure on the part of the associationists to recognise the apprehension of a form of combination as a distinct psychical element. The presented whole is for them simply the sum of its presented components. If the atomistic bias in psychology were followed up with full logical rigour, it would lead to the conclusion that if each one of a number of different persons had cognisance of an isolated part of a building, they would collectively cognise the building as a whole. Against any view pointing in this direction we urge the result which we have already at great length explained and defended: the presentation of a form of synthesis is as distinct from the presentation of the elements combined considered apart from their union, as the presentation of red is distinct from the presentation of green.

Finally, the associationist has a strong disposition to regard mental elements as entering into new combinations, without themselves undergoing transformation in the process. This never is and never can be true.

Elements which enter into a new whole receive new qualifications from their relations within this whole; and they must often suffer considerable preliminary modification, in order to make them capable of entering into these relations. We may refer again to the pack of cards. The whist-player needs not be told that in every fresh deal the several cards become qualified by their relations within the new whole. For the second clause of our proposition we may find an illustrative metaphor in the work of the builder.

* Bain's *Senses and Intellect*, p. 606.

† *Ibid.*, p. 605.

To fit in to the design and plan of a building the stones must be hewn into shape.

These illustrations are, of course, mere illustrative metaphors, not examples. Abundant exemplification will be found throughout the remainder of this chapter. But our special topic is not mental construction in the widest sense, but rather constructive suggestion as a productive aspect of associative revival. We shall here, therefore, give preliminary exemplification in a case where the part played by association is comparatively inconspicuous, because the elements combined appear to be supplied from without by sense-perception, not reproduced from within by association.

The following is a case of the sort, as stated from the associationist point of view: "Suppose," says Mill, "that a phenomenon consists of parts, and that these parts are only capable of being observed separately, and as it were piecemeal. When the observations have been made, there is a convenience (amounting for many purposes to a necessity) in obtaining a representation of the phenomenon as a whole, by combining, or as we may say, piecing these detached fragments together. A navigator sailing in the midst of the ocean discovers land: he cannot at first, or by any one observation, determine whether it is a continent or an island; but he coasts along it, and after a few days finds himself to have sailed completely round it; he then pronounces it an island. . . . Did he infer anything that had not been observed, from something else that had? Certainly not. . . . That the land in question is an island is not an inference from the partial facts which the navigator saw in the course of his circumnavigation; it is the fact themselves."*

In this statement there is an exclusive emphasis on mere combination; the process is a piecing of detached fragments together. The whole which results is described as a mere external juxtaposition of what had previously been given piecemeal. "That the land in question is an island . . . is the facts themselves; it is a summary of those facts."† Further, there is no indication that the detached fragments in any way alter their character in becoming components of the complex fact. They are taken together instead of being taken separately; but their juxtaposition makes no difference to them. They acquire no new relations: for nothing is inferred "that had not from something else that had." Now all these assumptions are uncritical and erroneous. In the first place, the parts to be put together are not initially apprehended in pure isolation from each other. The navigator starts by considering them under a certain point of

* Mill's *Logic*, vol. i, p. 324.

† *Ibid.*

view; if he does not think of them as part of an island, he at least thinks of them as part of a coast-line. The process of piecing them together is only possible because it is also a process whereby this relatively vague and indeterminate unity which is implied in his initial point of view, receives progressive determination in detail. It follows from this that the whole which results cannot accurately be described as a mere summary or external juxtaposition of the partial observations. It is the specific determination of a certain kind of whole which has been present to the navigator's mind from the outset. The form of combination involved can be represented when the special features given in each particular observation are obliterated: as when the coast-line is laid down on a map. This becomes still more evident when we consider the third point. It is untrue that nothing is inferred, or at least made inferrible, which had not been inferred before. The union of the "fragments" in a presented whole brings to light innumerable new relations before unseen. When the coast-line is known to be that of an island, we know that by starting from any part of it, and walking inland in a given direction, we shall reach the sea; further, when the outline of the coast, as a whole, has once been fixed, the relation of any part on it to any other part or parts whatever, and of each to all collectively, has been implicitly determined. Nothing but analytic attention is needed to ascertain these new relations, which are involved in the form of the whole. Of course this analysis is also a synthesis. In selecting special points of the spatial whole, and considering them in relation to each other, we construct new combinations, and each of these involves new inferences. In determining the relation of *A* to *B*, and *B* to *C*, we determine the relation of *A* to *C*. Thus the discovery of the shape of the coast-line which the circumnavigator makes, involves a concentrated infinity of instances. We shall revert later to the relation of inference to mental construction.

What has been said of the circumnavigator's discovery, holds good *mutatis mutandis* of the example which formed the main bone of contention between Mill and Whewell,—Kepler's discovery of the orbit of Mars. Kepler started with the presumption that the planet described some regular curve in its course: the nature of this curve became defined through successive observations of the special positions which it successively occupied. In one point, however, this example differs from that of the island. It clearly involves not merely construction, but constructive reproduction. The path of the planet between the observed points had to be mentally supplied by Kepler, in accordance with analogy. A process of this kind is what I propose to call Relative Suggestion, a term adapted from Thomas Brown. It may manifest itself in the most multiform way.

In the next section we shall distinguish some of its principal modes. We shall then proceed to show how it pervades primitive phases of mental life. We shall then make special reference to the part it plays in artistic construction, and in inference, formal and informal.

§4. *Types and Examples of Relative Suggestion.*

“Association marries only Universals.” It depends on a general connexion, but its specific working in each case is conditioned by the specific and relatively new nature of the present psychological datum in which the process of reproduction has its starting point. The most general formula for it is: *If the presented content A has formed part of a presented whole AB, then the presented content a, when it recurs, will tend to call up a whole aß formally corresponding to AB.* But the simplicity of this ultimate principle may be complicated in endless ways. The *a* which corresponds to *A* may be a simple modification of *A*, as a lighter grey is a modification of a darker grey, or, again, it may involve the relation of *A* to a new context, and it may happen that the constituents of this new context have associations of their own, which contribute to determine the productive-reproductive process. The following types and specimens are not put forward as by any means exhausting the varieties of Relative Suggestion. They are only intended to indicate the general nature of the possible variations.

(1) We may first consider a class of cases which approaches most nearly to the process of construction without constructive suggestion, which we have examined in the last section. *A*, *B*, and *C* have severally associates of their own; but they are for the first time brought into combination, so as to form the whole *ABC*. Their associates are thereby brought into corresponding combination, so as to form a new whole. What is especially to be noted in such instances is that the associated presentations suffer transformation by being brought into their new connexion. A good example is supplied by the use of language. Each word suggests its appropriate meaning, and new combinations of words suggest new combinations of meaning. But the meaning of the several words fluctuates with the context. Except in the case of terms scientifically defined, words have no rigid and unalterable significance. This is perhaps most obvious in the case of metaphorical extensions of meaning. Consider the variations in the import of the word “home” in the following sentences: “I am going home”;—this may mean something different, according as I say it on my death-bed, or to a friend in the street. “He drove his weapon home”; “Cromwell drove home his argument against the Pope with English cannon”; “The business of the

philosopher is to make himself intellectually at home in the universe"; "A home team"; "A house is not a home"; "Heaven is our home"; "Home-keeping youth have ever homely wits"; "A homely face." This is, of course, an illustration taken at random; innumerable other words are equally variable. There is a certain common element pervading their manifold occasional meanings; but this common element is an abstraction. In each concrete application of the term its import is specified by the connexion in which it occurs, so that even a strikingly novel use of it may be instantly intelligible. Let W stand for the word, and M for its meaning; we have a series M_1, M_2, M_3 , &c., of special significations. W is not of itself associated with any of these to the exclusion of the others, and it frequently calls up a modification of M , with which it has never been associated at all. The special modification of M which emerges on any particular occasion is dependent on context and circumstances, which we may denote by C . C , of course, may vary indefinitely, yielding a series C_1, C_2, C_3 , &c. Thus, if $W + C_1$ calls up M_1 , $W + C_2$ will call up M_2 , and $\frac{W + C_1}{M_1} = \frac{W + C_2}{M_2}$. Of course these formulæ are meant only as a device to make the general conception clear; it is not implied that it can be worked out with anything approaching to mathematical precision.

(2) The second group of instances is that in which a certain kind of series is given, and we mentally supply, in accordance with the law of the series, terms in it which are not given. There is an interesting allusion to this mode of Relative Suggestion in Hume. "Suppose a person to have enjoyed his sight for 30 years, and to have become perfectly well acquainted with colours of all kinds, excepting one particular shade of blue, for instance, which it has never been his fortune to meet with. Let all the different shades of that colour, except that single one, be placed before him, descending gradually from the deepest to the lightest, 'tis plain that he will perceive a blank, where that shade is wanting, and will be sensible that there is a greater distance in that place betwixt the contiguous colours than in any other. Now, I ask whether 'tis possible for him, from his own imagination, to supply this deficiency, and raise up to himself the idea of that particular shade, tho' it had never been conveyed to him by his senses? I believe there are few but will be of opinion that he can; and this may serve as a proof that the simple ideas are not always derived from the correspondent impressions, tho' the instance is so particular and singular that 'tis scarce worth our observing."* The general problem which Hume is here dis-

* Hume's *Human Nature*. Ed. Green and Grose. Vol. i, pp. 315, 316.

cussing is whether the mind can make to itself a new simple idea. This question may fairly be regarded as out of date, and does not concern us here. If we rigorously press the notion of simplicity, a simple idea is a presented content which has absolutely nothing in common with any other presented content. The mind cannot make such an idea, because such an idea is an intrinsic impossibility. But the special question concerning the filling-in of the absent terms of a series, such as that of the gradations in the depth of a colour, is the very question which we are here raising; and we cannot do better than begin by considering Hume's example. It is plain, as Hume says, that the person in the case which he supposes "will perceive a blank"* where the shade is wanting. Now this in itself involves Relative Suggestion, whether he actually succeeds in recalling the right shade or not. The idea of something qualified by quite specific and definite relations within the series is called up. The case is analogous to that in which on seeing a person we try to recall his name, and fail. There is a reproductive process which is not completed. In the next place it must be noted that for our purpose the question whether the person has had actual experience of this particular shade of colour before, is irrelevant. By hypothesis, it is not the associations which it has acquired in our previous experience of it, which now recall it. What is really operative is the form of the series.

Represent this series by $B_1, B_2, B_3, B_4, B_5, B_6$. B_4 and B_6 suggest B_5 , not because they have been previously associated with B_5 , but because $B_3 : B_4 :: B_4 : B_5$, and $B_4 : B_3 :: B_6 : B_5$. Besides this, when B_5 is recalled, it is not just the same in nature as when it previously appears in a different context. In being transplanted, it becomes transmuted. It now appears as a gradation in a series of gradations, and the attributes which belong to it as part of this series may be more important and interesting than any which it previously possessed. The process of suggestion may, of course, be greatly facilitated by prior experience of B_5 ; but, on the other hand, it may not. All depends upon the attention we have paid to it and the frequency of its repetition. It may be that in past experience it has acquired no associations which of themselves would suffice to revive it, and yet it may be revivable as part of the colour series. In this case previous experience would count as quite a subordinate factor in the result. The question of fact remains: Are we able thus to supply a missing gradation of colour depth? Personally, I find that I do so with pains and difficulty, and with only an imperfect result. But my general power of imaging colours is deficient. A good colour

* Of course we suppose the threshold of *Unterschiedsempfindlichkeit* to be exceeded.

visualiser would, I presume, find no such difficulty. It seems to be a good problem for statistical experiment. I find that my power of filling in intermediate gradations is much greater for degrees of loudness in sound, or of muscular effort. It approaches something like accuracy for geometrical images. Given a series of lines, varying in length according to a certain easily discernible ratio, and I can mentally continue the series, or fill in links where it is discontinuous, with what appears to me to be approximate correctness. Similarly with a series of curves of different degrees of curvature. Of course, the essential point is that we can make the attempt, and that the result follows from our sense of proportion, and not from any irrelevant association. So far as this is the case we are mentally productive, though we may be in error. There are, however, cases in which full accuracy is possible. Thus we can continue a simple numerical series, such as 3, 5, 7, 9, or $1, \frac{1}{2}, \frac{1}{4}, \frac{1}{8}$, with facility and accuracy by mere Relative Suggestion, until the terms become so large that they require to be calculated according to a formal rule of operation. The continuance of such a series is not analogous to the repetition of the letters of the alphabet. In repeating the alphabet, we depend wholly on association between the preceding and the succeeding letters. In continuing the numerical series, the clue which guides us is the general nature of the serial transition.

(3) In another and very important type of Relative Suggestion, the mental production consists in supplying terms in one series corresponding to terms in a parallel series. This is exemplified in all reduction or enlargement of the scale of a whole, while the proportion of its parts is maintained. This is an operation which we are constantly performing. It is the mental construction which precedes and makes possible all graphic representation on paper of large objects, all plans of the disposition of a battle, and so forth. In general, our mental representations of space-relations are in miniature. Reduction of scale of another kind is to be found in the child's dealings with its doll. The diminutive waxen baby must have all its belongings diminished in a corresponding ratio. A very clear instance of this third class of relative suggestions is supplied by the singing or mental repetition of a tune in a different key from that in which it has been previously heard. The absolute pitch of the note is determined by the key-note, which may vary. The identity of the tune is preserved by correspondence in the transitions between the notes. In these instances, which might be indefinitely multiplied, the terms of the one series for which a parallel is supplied in the other need not be actually presented. The pre-formed associative connexion specialises itself in the new material without any distinct reference to its previous embodiment. This is not so in another set

of instances which come under the present heading. As typical of these, we may take the work of the painter or draughtsman. In passing from actual scenery to the coloured picture, and from the coloured picture to its reproduction in black and white, there is a "transposition of values" delicately adjusted, so that the values may, as far as possible, preserve their relation to each other. We may consider specially the representation of gradations of colour-depth by corresponding gradations of grey. Ruskin, in his *Elements of Drawing*, after giving the beginner directions for forming by a mechanical method black and white series corresponding to certain colour series, proceeds to point out that the special correspondences thus brought to light are useless in actual practice. "For it would never be possible for you to gradate your scales so truly as to make them practically accurate and serviceable, and even if you could, unless you had about ten thousand scales and were able to change them faster than ever juggler changed cards, you could not in a day measure the tints on so much as one side of a frost-bitten apple; but when once you fully understand the principle and see how all colours contain, as it were, a certain quantity of darkness, or power of dark relief from white—some more, some less; and how this pitch or power of each may be represented by equivalent values of grey, you will soon be able to arrive shrewdly at an approximation by a glance of the eye without any measuring scale at all."*

(4) All the above examples may be regarded as conditioned by the transference of a pre-existing form of combination to new matter. In other instances the converse aspect of the case is more conspicuous. The striking point is that pre-existing matter is brought into a new combination. Thus to take a simple case, we may have carefully considered the pictures in a collection in the way of comparing their æsthetic merits; but we may never have thought of counting them. This involves a general transformation of the given material. Certain aspects of it are now ignored as irrelevant, and other aspects, previously ignored, are brought into prominence. A work of art becomes a unit in a numerical series. At the same time, the pre-formed associations are still operative in the new process. The counting is possible because we have already considered the pictures in their æsthetic relations. The important point is that the working of these associations is transformed by the new point of view; they suggest numerical rather than æsthetic relations.

(5) There is another group more or less cognate with the last, in which one point of view does not merely supplant another, but blends with it, and co-operates with it in controlling the course of

* *Elements of Drawing*, pp. 43, 44.

relative suggestion. Poetic composition is a good example. Here, as Bain notes, there are a number of distinct conditions to be satisfied. In all literary composition "besides conveying a meaning, certain grammatical forms have to be observed; likewise, there are rhetorical properties or rules of good taste; a certain melody or cadence is sought to be imparted; and, in poetic composition, the other qualities have to be attained under the restrictions of metre and rhyme."* It must be added to this that both sound and sense must yield a unity of æsthetic effect. This is the most comprehensive form of combination, which includes the others as its parts, and realises itself by means of them.

Each of these conditions of verbal combination is a form which is being continually transferred to new matter. Thus each taken singly, apart from its relation to the others, would give rise to trains of Relative Suggestion. The forms of construction by which relationships are indicated, including the distinction of the parts of speech, inflexion, and syntactical rules, constitute a comprehensive thought-schema, which pervades and controls the whole connexion of our ideas, so far as they find expression in language. In every moment of our intellectual life we are filling in this schema with new material: in every moment we are constructing sentences and, *eo ipso*, corresponding ideal combinations, which are built up in accordance with formal analogy, not through previous association between the actual words which enter into their composition. Similarly, metrical form is a constant source of Relative Suggestion. In verse composition, words do not suggest each other merely because they have been previously combined, but because a metrical relation is to be fulfilled. Now when grammatical forms and metrical forms are to be combined so as to produce unity of æsthetic effect in a given subject-matter, the course of suggestion is simultaneously controlled by all these conditions.

Bain gives a different and, as it seems to me, a quite untenable account of the matter. He represents the whole process as one of trial and error. "It is not enough that I can combine one form of words sufficient to express a certain meaning; I must be able from my verbal resources, recovered from the past, to construct several forms all equally good as regards meaning, so that I may be able to choose the one that satisfies the other conditions as well. In fact, the mind must possess, not one way of bringing out a certain effect, but a plurality of ways; and, out of this plurality, we fix upon the form that yields some second effect also desired. If a third effect is wanted, there must be a power of altering the combination already

* *Senses and Intellect*, p. 619.

made without losing the previous effects; and, for this end, we must be able to command a choice of equivalent phrases in the room of those that are discordant as regards the new end."* The whole conception of constructive combination, as consisting in trial and error, and in selection from a throng of suggested ideas, which crowd in upon the mind, merely owing to their conjunction in previous experience, is vicious. The process of suggestion itself must be selective. As Brentano remarks, "If we compare the number of all possible combinations of tones in their manifold variety as regards pitch, and intensity, and timbre, with the number of tone-combinations which yield an æsthetic effect, we shall see that mere abundance and liveliness of imagery is inadequate to explain the facility with which a Mozart or a Schubert composes music."† Such words as "inspiration" would have no kind of meaning if Bain were right. A process of patient and laborious sifting and rejecting is exactly the characteristic which is conspicuous by its absence in the mental construction of the man of genius. Pope says, "I lisped in numbers, for the numbers came," and yet no man spent more time and pains than Pope in polishing and correcting his work. But if the working of his mind had been such as Dr. Bain describes, he never would have written anything worth correcting or polishing. The notion that Shakespeare first of all tried to express his meaning, and then sought for metre, and then for a satisfactory cadence, and then for unity of æsthetic effect; and that, under each of these heads, he went through a laborious process of sifting and selection, and that finally by these means the *Venus and Adonis* and the *Midsummer Night's Dream* came into being, is a transparent absurdity if ever there was one. It would have taken him a century to write ten lines, and then he would not have succeeded on this plan. The nearest approach, perhaps, to the mental attitude Bain describes is that of the schoolboy who is beginning to do Latin verse and has no turn for it. One insuperable difficulty in the way of the view I am here opposing, is that it destroys the unity of the process. This unity depends on the unity of æsthetic effect which is aimed. The æsthetic effect is conjointly conditioned by metre, cadence, meaning, and grammatical structure, and it must be lost if these clues are followed in isolation from each other. Perhaps this is the reason why Dr. Bain omitted to notice unity of æsthetic effect at all, as one of the conditions to be fulfilled. But, if this be neglected, a poem or any other work of art is *Hamlet* with the Prince of Denmark missed out.

* *Senses and Intellect*, p. 619.

† *Das Genie*, p. 26.

Of course I do not deny that there is much trial and error in most trains of Relative Suggestion. The exigencies of exposition have perhaps led me to represent the operation of this principle in a diagrammatic way, which may lead to misunderstanding; a does not always call up a β corresponding to B , precisely as a corresponds to A . This is only the ideal case of relative suggestion. In general, it is truer to say that a tends to call up β , and that, in fact, it for the most part does so more or less imperfectly. So far as this imperfection extends, intellectual ends can only be attained by a process of repeated trial and failure. But, as von Hartmann says: "Even in those cases where experience shows a repeated rejection of revived ideas, it should not be forgotten that all these rejected ideas are by no means absolutely fortuitous in respect of the particular object, but always tend to this goal, although they may not hit the nail upon the head."* Thus, in any process of mental construction, the efficacy of relative suggestion is in inverse proportion to the amount of tentative groping. Its perfection depends partly on the familiarity attained in previous practice, with the special kind of relation involved, and partly on the degree of mental excitement in respect to the subject matter at the moment. The facility of genius consists in the right idea arising at the right time, without previous effort, hesitation, or failure. Where the transitions are so immediate, they take place without being specially attended to, and so may be called automatic. This is a large part of what is meant by the "inspiration" of genius. Of course, when the transitions dependent on relative suggestion are thus automatic, the constructive process as a whole may, and in the case of a work of genius must, be the extreme opposite of automatic. Mozart is a favourite example of the automatism of genius; but the process of composition with Mozart involved a consciousness more intense, vivid, and concentrated, than is easily conceivable by ordinary mortals.

(6) The last set of instances to which I shall draw attention differ widely in nature from the preceding; none the less, they can be brought under the same principle. I refer to inferences through a middle term. Of course I have nothing to do with these inferences in their logical aspect. I am only concerned with the process of suggestion through which the mental construction on which they depend takes place. It will be well to begin with an example:— Suppose that in a pedestrian excursion I have lost my way. It happens that I catch sight of some landmark which is known to me to be situated at a certain definite position and distance from my destination. I then know where I am, what course to take, and how

* *Philosophy of the Unconscious*, vol. i, ch. vii, p. 302.

far I have to go to reach my journey's end. Now here there has been a pre-formed association between the landmark which guides me and the place which I wish to reach. The landmark therefore recalls the place as in a certain relation to itself. This relation is one of position and distance, because my mind is initially occupied with the spatial relations of the objects in the region surrounding me. Nor is this all. My mind is pre-occupied from the outset with my present position; and when I see the landmark I think of it in relation to this. Hence, when the sight of the landmark suggests the relative position of the place I wish to reach, the course of suggestion is so conditioned by my mental attitude that the resulting ideal whole is one in which my present position, the landmark, and my destination are combined in definite relations to each other. Of course such trains of suggestion may have a different order, according to circumstances. In the present instance the middle term is given, and the third term is suggested. In other cases the middle term itself may not be given, but mentally recalled. The formula for this second class of instances, which is substantially similar to the first, may be stated as follows:—*A*, *B*, and *C*, are all by their nature constituents belonging to a spatial, quantitative, or other kind of whole or series, *W*. *A* has been apprehended in a certain relation to *B* within this whole, and recalls *B* so as to present it in this relation. *C* also has been apprehended in a certain relation to *B*, and so tends to recall *A* in this relation. *A* and *C* are now both apprehended as having some relation within the same formal system. They conjointly call up a *B*, but this *B* is not the same as each of them would recall separately. It is qualified by its joint relation to *A* and *C*, and it is apprehended as a link of connection between them; so that the three constitute a specific kind of whole, *W*₁, within the original one. On the emergence of this new combination the relation between *A* and *C* itself becomes transformed. As constitutive of *W*₁ it receives a specification which did not initially belong to it when it was merely apprehended as some relation within the relatively indeterminate *W*. Thus in apprehending two quantities as equal to the same quantity we apprehend them as equal to each other.

In the web of our concrete psychical life, these various modes of Relative Suggestion are intimately interwoven with each other in the most complicated way; and our attempt to disentangle them involves artificial abstraction. There is, however, considerable simplification in the case of sense-perception and the comparatively simple processes connected with it. Here the most prominent and important form of construction is the third to which we have alluded; in which a form of connexion remaining relatively the same, varia-

tion in one of the terms suggests corresponding variation in the others.

It may be questioned whether there are any clear instances of absolutely simple, as opposed to relative, suggestion. Perhaps the nearest approach to it is to be found in the mere repetition of what has been learned by rote. Thus, in repeating the alphabet, it would seem that we merely reproduce it without any kind of modification due to relative suggestion. But even in this case it would be rash to say that such modification is absolutely excluded. We may repeat the alphabet in various ways, with different rates of rapidity, with different degrees of distinctness, loudness, and emphasis, and with differences of rhythmic grouping. Other things being equal, the mode in which we go on with our repetition will be conditioned by the mode in which we start. But this is a rudimentary stage of relative suggestion. An analogous case in which the relativity is sharply and distinctly marked, is the singing of the same tune in different keys. The absolute pitch of the note is determined by the key-note, which may vary. The identity of the tune is preserved by correspondence in the relations of the notes.

§5. *Relative Suggestion in Perceptual Process.*

The Suggestion with which we are concerned under this head is that by which the transition from a given sense-impression or impressions to the corresponding percepts, takes place. Our aim is to show that this process is constructive, and not merely reproductive, or, in other words, that it involves free adaptation to varying conditions which have not been adequately provided for in advance by specially pre-formed particular associations. Consider first our apprehension of the position of objects by means of touch. The position of objects is fixed by us in relation to the varying position of the tactile surface with which they come in contact. But the number and complexity of such variations is immense. Consider the single case of the finger-tips. These, as Lotze notes, are capable of being put into the most varied relative positions by means of the finger-joints, each of which by itself and apart from the others can move its tip through a semicircle. "This marvellous system of susceptible surfaces is finally extended freely into all directions of space by the bendings and extensions of the wrist and elbow, and the still more unlimited mobility of the upper arm."* Now the question is whether each several variation of this kind has been provided for by a particular association, which has become by

* Lotze *Microcosmus*, vol. i, pp. 586, 587.

repetition or otherwise, so firmly fixed that it operates with automatic rapidity, ease, and precision. Is it not much the more probable explanation, that we have here a constructive process, depending on relative suggestion, and analogous to that which pervades higher phases of our mental life? Before the reader decides this question negatively or doubtfully, he is invited to consider each and all of the cases which are brought forward in this section. He will then, I hope, come to the conclusion that the explanation here advocated is, if not the possible one, at least distinctly preferable to that which relies on simple suggestion. Another illustration drawn from tactual and motor experience is furnished by the indirect contact on which all use of implements depends. This is a topic on which Lotze loves to dwell, and we refer to him for a fuller discussion of it than can be given here. If we grasp a rod at one end, or balance it on the finger-tip, we at once perceive the length or height. So, "if a ball is suspended by a thread from our hand . . . and if we set it in circular motion, so that the thread exerts pressure with varying degrees of tension and velocity on different parts of the hand's surface in a regular sequence, we now imagine that we are directly aware of the length of the interval at which the ball is revolving, as well as of the radius of its rotating circle, and of the velocity and weight with which it moves in the circumference of this circle."* So if with the finger we firmly press upwards on the bottom of a hollow vessel, we become aware of any contact with the vessel, of the distance and direction of the impact, and of the hardness and elasticity of the material. The blind man's stick, the surgeon's probe, the pen of the clerk, and the brush of the painter, are only of use because the delicate variations of pressure and resistance at the point of contact with the hand reveal from moment to moment the nature of the material they operate on, and of their action on this material, as well as the slight bendings which they themselves undergo. Any one who has realised the infinite complexity, delicacy, and variety of these and similar suggestions, will scarcely be persuaded that each fine particular variation has its own equally particular pre-formed association. The only explanation which can cover the facts without the most violent straining is that which assumes a constructive process. General principles of combination particularise themselves according to the particular occasion.

Turning from touch to sight we may first draw attention to our judgment of the proper or local colour of a body throughout the changes which it undergoes under changing illuminations. This is a point on which Helmholtz has laid special emphasis. Unfor-

* *Lotze Microcosmus*, vol. i, p. 588.

tunately, however, he has extended its scope beyond due limits, and has included under it phenomena which ought rather to be referred to physiological contrast. But when every allowance for such contrast is made, it remains true that a vast variety of transient changes in the colour of objects which the artist would have to note and imitate, in order to give a true representation of them, are commonly ignored, as such, by the ordinary percipient, and unconsciously interpreted as appearances of the real and abiding colours of the objects seen. We abstract this colour from its variations, so that, as Delbœuf observes: "When we see the object reflected by a mahogany table, we see it in what we call its true colours, and not suffused with the brown tints of the table."* Every painter represents a white object in shadow by means of grey pigment, and if he has correctly imitated Nature, it appears pure white. To realise the full complexity of the case, we must remember how many factors are involved in determining the light-sensation produced by an object. Besides local colour, there is the colour reflected on to it by other objects, the intensity of the illumination, which in full moonlight is 150,000 times less than in sunlight, the colour of illumination, which differs, for instance, in daylight and in candlelight, the light and dark produced by local colour, and the light and dark produced by illumination. What we call shadows are really lighted by complex reflected lights, which may be tinted in the most various ways. All these delicate, complex, and shifting variations are for the most part unnoted by the ordinary observer, and yet they contribute in the most subtle way to determine his perception of objects. Although he fails to note them himself, he may readily recognise that a picture which ignores them is a bad imitation of Nature. It is needless to point out how difficult it is to refer to simple association all this fine adjustment, this fine allowance for evanescent changes, and abstraction of the permanent fact from the accidental appearance.†

Perhaps, however, the most remarkable examples of constructive process in perception are those supplied by the perceptions of depth, distance, and solidity. The sense-apprehension of distance has its starting point in sensory impressions, which are not themselves distinguished and identified. These sensory data are of the most

* *La Psychologie comme Science Naturelle*, p. 61 (quoted by Lewes).

† Ruskin says: "Having once come to conclusions touching the signification of certain colours, we always suppose that we *see* what we only know, and have hardly any consciousness of the real aspect of the signs we have learned to interpret. Very few people have any idea that sun-lighted grass is yellow," *Elements of Drawing*, p. 7. The previous process of "coming to conclusions" is mythological, but the description of our present mental attitude is perfectly correct.

various kind. The binocular perception of the distance of the object which is directly fixated, depends very largely upon the motor experience accompanying the varying convergence of the two eyes. The amount and direction of change in the motor series carries with it a corresponding amount and direction of change in the distance perceived. The point fixated at any moment forms a centre around which other distances are grouped. The perception of these, in so far as change of the fixation-point does not come into operation, is in binocular vision, predominantly determined by the combination of the dissimilar perspectives presented to the two eyes. The delicacy and fineness of the distance discrimination which is thus effected, must be carefully noted. Spurious banknotes, as Helmholtz observes, are detected by putting a suspected one in a stereoscope along with a genuine specimen of the same kind, so that it is seen whether all the marks of the combined image appear on the same plane. Now as to this delicacy of discrimination, its enormous complexity, a single glance without appreciable movement of the eye, will group innumerable points in their relative distances from the observer and from each other. Only the desire to support a preconceived theory could lead anyone to attempt to explain this by separate association between each particular distance and each particular difference in the relative position of the images in the retinas of the two eyes. What takes place is construction according to a general principle of co-variation. Variation in the retinal experience carries with it a variation corresponding in kind and degree in the distance-perception.

The conditions of distance-perception so far taken in account, come into play only in the binocular apprehension of relatively near objects. In the apprehension of remote objects we depend mainly on the distribution of light and shade, on the indistinctness of boundary lights, and faintness of colouring which accompanies increased distance, and on the known magnitude of the objects. These are the means of which the artist avails himself to suggest distance and solid shape. The subtle effect of the distribution of shading may be seen in the incessant changes in the details of a mountain front, under changing light. The relation of magnitude and distance constitutes a peculiarly striking case of proportional variation. When, under artificial conditions, the magnitude of the retinal image is kept unaltered, while the convergence of the eyes increases, the object appears proportionately smaller; and, conversely, the inclination of the optical axes being unchanged, increase or diminution of the retinal image yields a corresponding increase or diminution in the apparent size. Similarly, when the actual magnitude of an object is known by previous experience, the extent of the retinal image measures its

distance, and *vice versa*. In monocular vision the conditions are the same as for vision of distant objects, except that there is added the varying adjustment of the lens of the eye.

We must note that all these factors do not work in isolation, but often co-operate in the most delicate relation to each other. This consideration alone counts strongly against explanation by simple suggestion.

Consider, in conclusion, the way in which we identify shapes under the endless variations and points of view from which we see them. With change in the point of view the retinal image changes. This is true even of such a simple figure as a rectangular cross. Yet the figure is instantly identified as the same, amid the variety of its sense-appearances. Moreover, in the case of superficial figures, there is another condition on which the identification depends—the kind of surface to which it is referred. The retinal image which will give the perception of a rectangular cross on a flat surface, will not do so on a spherical surface.

The point which we desire to make plain is, that the same constructive process which pervades the higher phases of our mental life, also pervades those lower phases which are classed as sense-perceptions. In these it obviously does not consist merely in the bringing together of elements which have not been brought together before. On the contrary, its most prominent feature is the change which the new combination produces in the elements combined.

One question remains yet to be decided. Can perceptual construction properly be regarded as unconscious inference? All depends on our definition of the term "inference." If we define it as a mental construction issuing in a judgment or belief, then, undoubtedly, inference is involved in sense-perception. But it will be generally admitted that this definition is too wide. We may try to amend it by saying that inference is a mental construction that both has its point of departure in a judgment and issues in a judgment. On this view we should have to refuse the title to merely perceptual process, however constructive it may be. But the proposed definition, though not likely to mislead in practice, scarcely seems to touch the essence of inference. This involves a clear distinction of reason and consequent, and the apprehension of their connection. Now, we must here avoid a very plausible error. The premisses of an inference are not to be identified with the steps of the psychological process which lead up to it. The premisses are, strictly speaking, not premisses at all, except in so far as their relation to the conclusion is discerned. But this is possible only in so far as mental construction is already completed. What ultimately compels the inference is the special nature of the whole which is presented as the

result of the constructive process. It is the nature of this whole which determines the relation of its parts. We do not infer that *A*, being to the right of *B*, is also to the right of *C*, because *B* is to the right of *C*, until *A*, *B*, and *C* appear to the mind as arranged in a definite spatial order. Nothing short of this justifies the inference. It follows from this that no merely psychological analysis, and no statement of general laws of thought, can yield the specific formulas of actual inference. These in each case depend upon the nature of the subject-matter. Turning now to the special question under consideration, it seems conceivable that sense-perception might be properly called an inference, although as a psychological process it has its starting-point in sensation and not in judgment. If as the outcome of the process, the sense-experience ceased to be merely sense-experience, and became distinguished and identified, and if it were apprehended in its necessary connection with the resulting percept, the perception might rightly be called an inference. But in point of fact this is not so. The percipient does not analyse and identify the sense-impressions which form the psychological data of perception. Hence they remain data only from a psychological point of view and not from a logical. It has been the tardy and difficult task of modern psychology, physiology, and physics, to discriminate as perceptual data such experiences as those connected with the convergence of the eyes, with the binocular combination of dissimilar perspectives, and so forth. The percipient, as such, entirely ignores them.

§6. *Relative Suggestion in Automatic Movement.*

In movement we may distinguish two kinds of automatism. Some motor processes may, in a comparative sense, be regarded as purely automatic, inasmuch as they go on while the attention is directed to disparate topics. Walking is the most obvious illustration. Bicycling, when it has been thoroughly learned, is another. The bicyclist may spin along while he is all the time attending to the scenery or to the talk of his companion. It is highly improbable that all the varying adaptations required for this process have been severally and separately provided for in the process of learning and each so fixed by repetition as to be readily available at need. It is difficult to see how all the changes in the nature of the ground, and all the possible deviations from equilibrium, which are met by an automatic response, can be thus anticipated in detail. Other movements may be described as relatively automatic. They are automatic parts of a process which, as a whole, involves concentrated attention. Attention is engrossed by a series of fluctuating conditions, and by

the nature of the end to be attained. But the adaptation of movements to the perceived conditions takes place in a more or less automatic way. In so far as this is the case, the question, "How am I to react?" does not arise. "How," says von Hartmann, "does the dog calculate the curve of the morsel which it catches so cleverly at any distance and at any angle?" Of course, there is no calculation on the part of the dog. But there must be something which for the purpose is equivalent to the calculation. Mere reproduction, due to merely particular association, is not enough. The dog's reaction must take place according to a general principle which becomes specialised in its application to the fluctuating conditions. *Mutatis mutandis*, the same may be said of all kinds of motor dexterity. Consider, for instance, the importance which Ruskin attaches to the accurate performance by the beginner of one or two quite limited and special exercises in drawing. "Show the camel's-hair and the colour in it that no bending nor blotting are of any use to escape your will: that the touch and the shade *shall* finally be right, if it costs you a year's toil; and from that hour of corrective conviction, said camel's-hair will bend itself to your wishes."*

§7. Informal Inference.

We have seen that the perceptual process does not, properly speaking, involve an inference. For this, ideas, as distinguished from percepts, are needed. Nevertheless, inferences may connect themselves so closely with a percept, that they seem almost to be integral parts of it. This was in the mind of Helmholtz when he described perception as "unbewusstes Denken." Wherever the import of a complex percept is translated into mental imagery there is an inference. Thus, if we touch an object and then call up mentally the image of the visual appearance which corresponds to the tactual, we have gone through a mental construction issuing in a judgment and starting with a judgment. Moreover, in the presented result, our belief in the tangible configuration of the thing, and our belief in its visible configuration, remain distinct, and the one is apprehended as the ground of the other. Thus all the conditions of a true inference are fulfilled. The same holds good when the visual appearance is given, and we ideally represent the tactual in accordance with it. In such instances the process is essentially constructive, for the revived visual image shares the variation of the tactual datum, and *vice versâ*. Each adapts itself, so to speak, to the bends and folds of the other.

* *Elements of Drawing*, pp. 136, 137.

Again, we may start from the perceived shape of an object seen from a certain point of view, and then ideally envisage the series of varying appearances which the same object would present from different points of view. With sufficient power of geometrical imagery, we may mentally deduce all these and review them one after the other. Nor is it necessary that the perspectives which we thus ideally construct should all have been previously perceived. By the mental application of cross-sections in certain directions we may, as Helmholtz observes, derive from the original percept mental views of the object which we have never had in actual perception.

Such inferences as these are informal. By this I mean that the form of combination which connects their terms comes before us only as it is embedded in the detail of the particular case. It is not generalised and explicitly expressed in an abstract formula. In order to attain such general formulation of the universal principle which underlies an inference, systematic comparison of particular cases is necessary. We shall have a word to say presently on the nature of formal inference, after having first considered a mode of mental construction which, even in its highest phases, dispenses with abstract formulæ—the play of constructive imagination.

Nearly all the practical inferences of ordinary life are of the informal kind. When in practical life I infer that *A* is to the right of *B*, because *B* is to the right of *C*, *A*, *B*, and *C* are quite specific objects. The algebraic generality which attaches to them in my description of the process as a type of inference, is absent from the mind of the person who makes it. So the ordinary reasonings which in books on Logic are for the most part chosen as examples of syllogistic form, are in ordinary life performed without any recognition of a major premiss. Mill has illustrated this in dealing with what he is pleased to call Reasoning from Particulars to Particulars, and Spencer has urged the same point with great clearness and cogency. We may here quote one of Mill's examples. "An old warrior, on a rapid glance at the outlines of the ground, is able at once to give the necessary orders for a skilful arrangement of his troops, though if he has received little theoretical instruction, and has seldom been called upon to answer to other people for his conduct, he may never have had in his mind a single general theorem respecting the relation between ground and array. But his experience of encampments, in circumstances more or less similar, has left a number of vivid, unexpressed, ungeneralised analogies in his mind, the most appropriate of which, instantly suggesting itself, determines him to a judicious arrangement."*

* *Mill's Logic*, vol. i, p. 216.

§8. *The Play of Imagination.*

The play of imagination is treated by Bain under the head Emotional Constructiveness. The title is appropriate. We may say that in the play of imagination the mental craving connected with some mood or emotion calls up and co-ordinates ideas which harmonise with it and which gratify it in so far as it can be gratified merely by receiving definite form and outline, apart from any change in the world of actuality or in our beliefs concerning it. Bain very aptly gives as an example of Emotional Construction the day-dream of the crockery-seller in the *Arabian Nights*. His formal analysis of this case is, however, not quite satisfactory. He says: "The owner of the crockery-basket had amassed pictures of happiness and grandeur which required only to be cast into a consecutive order to make his epic."* Here we have the old fallacy that mental production consists merely in putting together ready-made material. Of course, as Bain's own account of the matter is sufficient to show, there is more than this involved. The images brought into consecutive order, so as to gratify the ruling emotion, are profoundly modified in the process. The buying and selling, with which the crockery-seller's reverie started, were not business transactions such as he had ever had experience of, nor were they remoulded in his mind by a conscious process of addition and subtraction. They became spontaneously transformed so as to fit into their places in the consecutive order.

The most important kind of emotional construction is the æsthetic. Æsthetic emotion is marked by a peculiarity, that it can be satisfied purely by the play of imagination. Its embodiment in actual works of art only serves as an aid to emotional construction. Closely connected with this peculiarity is another. Æsthetic satisfaction is a satisfaction derived from the form of combination of the parts of a whole. The pleasantness of the several elements is indeed a contributory factor of the highest importance, but it has æsthetic value only in so far as each several source of enjoyment has its action intensified by this relation to the whole of which it is part. In combinations of this kind the part played by relative suggestion is very prominent. We have already discussed poetic composition. For painting we may refer to any art critic who has the power of reflective analysis. The following quotations from Hamerton will sufficiently serve for present illustration: "The lightness and darkness of each object, being relative, must be translated synthetically, that is, with continual reference to the rest of the picture. When this is not done the parts may be separately true, yet false

* *Senses and Intellect*, p. 641.

when considered with reference to the whole."* "Whether you will or not, in painting on any one part of your picture you are really painting upon, that is, changing the colour of, the whole canvas at once."† "Synthesis in form does not merely *arrange* given forms but runs into and modifies every line in the forms themselves. A great inventive artist never in a picture draws anything exactly as it is, but compels it into such shapes as he wants in that place, having reference all the time to all the other shapes either already put or to be put in all the other parts of the picture."‡

In all artistic construction the form of combination which controls relative suggestion is only apprehended as it is embodied in a special way in a special material. Certainly the artist, as distinguished from the art-critic, never attempts to describe his ideas in abstract terms. There is, however, one way in which the creative artist, as such, mentally disengages the ideal plan of synthesis which guides the flow of his ideas from the special matter in which he desires to incorporate it. This happens when he transfers it from one kind of material to another kind. This process, which forms a sort of meeting-point between scientific and artistic method, we shall now proceed to examine.

§9. *Relative Suggestion as related to Suggestion by Formal Similarity.*

Identity, or correspondence in form of combination, is a very potent factor in determining suggestion by similarity. A portrait or a picture suggests its original more because the relation of its parts is analogous to the relation of the parts in the original, than because of any resemblance in the parts themselves taken severally. All metaphor depends upon suggestion of this kind. When Tennyson says: "A doubtful throne is ice in summer seas," the transition in his mind was not mediated by any material identity between ice and a throne, or between a disputed succession and summer seas. So too when Ruskin compares a society undifferentiated by diversity of individual character to one "in which every soul would be as the syllable of a stammerer instead of the word of a speaker,"§ the mental suggestion is a formal one. When Hobbes says that mental imagery is obscured by sense-impressions, as the light of the sun obscureth the light of the stars, and that the vivacity of the mental image in dreams is comparable with the appearance of the stars at night when the sun has set, the suggestion depends on the correspondence of

* *Thoughts about Art*, p. 179.

† *Ibid.*, p. 180.

‡ *Ibid.*, pp. 180, 181.

§ *Elements of Drawing*, p. 166.

relations. It has been said that the result of a well-conducted discussion is to give one a binocular apprehension of the debated topic by a combination of dissimilar perspectives. For a comparatively superficial and one-sided view there is substituted a kind of stereoscopic view. There could not be a better example of suggestion by formal similarity.

Now the nature and operation of Relative Suggestion is most conspicuous when it is preceded and conditioned by formal suggestions of the kind described. When a metaphor first flashes upon the poet's mind, the mental transition is due to suggestion by formal similarity. But he may subsequently proceed to work out in detail the formal analogy so as to discover new correspondences. In doing so, he exemplifies the process of relative suggestion. Browning, in the *Ring and the Book*, starts with a comparison between the way in which he, by the help of his imagination, fashions anti-quarian material into a poem, with the way in which a workman fashions a ring, by first mingling the gold with an alloy. This is suggestion by formal similarity. But when at the end of the poem he refers to his own ring, as lying outside Mrs. Browning's ring of verse, and so serving to link England to Italy, the transition in the poet's mind is from the general analogy to a special correspondence. But the process is most strikingly illustrated by continuous allegory. Bunyan, in the *Pilgrim's Progress*, starting from the general analogy between an actual pilgrimage and the spiritual pilgrimage of the Christian, works out the formal correspondence in elaborate detail. In so doing he constructs a narrative full of dramatic incidents, which is interesting quite apart from its allegorical significance. And yet the train of ideas is throughout controlled by the initial analogy. *A* does not simply suggest *B*; it suggests a β of

such a special kind that $\frac{A}{B} = \frac{a}{\beta}$. In other words, the connection of things and events in the actual narrative *ABCD*, &c., shapes itself so as to correspond to its spiritual counterpart *aβγδ*, &c. Spenser's *Faerie Queene* is full of similar allegories. Take, for instance, the representation of Care as a blacksmith, who "to small purpose yron wedges made,"* and whose bellows were Sighes. In this case the reality, in the person of Sir Scudamore, is placed side by side in the same room as it.

What is distinctive of the above instances of Relative Suggestion is the controlling influence of a definite model. The mind fashions a new determinate whole, according to the pattern supplied by another equally determinate whole. The formal scheme embodied in

* Book iv, ch. v.

one kind of material is transferred to another kind of material, so that the old relations are as far as possible preserved, but new terms are found to satisfy them. Processes of the kind described are not confined to the æsthetic play of the mind. They also fulfil an important function in its scientific work. A geometrician, having hit on the idea of a fourth dimension, corresponding in its relation to the third with that of the third to the second, and with that of the second to the first, works out in detail the correspondence of relations. Thus on the analogy of the rule by which we represent the third dimension on a flat surface he may endeavour to draw a correspondent representation of the fourth. The first germ of the law of gravitation probably lay in the suggested analogy between terrestrial gravity and solar attraction. But it is just in a case like this that the direct working of relative suggestion proves inadequate for further progress. Suppose that Newton initially hit on the comparison of the relation of the falling apple to the earth, with that of the earth to the sun, and of the moon to the earth, then Relative Suggestion would lead him to anticipate that the identical relation would express itself in a specifically different way under specifically different conditions. But the anticipation would be indeterminate. It would not of itself enable him to fix the exact nature of the special variations. For this, something else is required. He cannot proceed to verify the analogy without explicitly formal inference.

§10. *Formal Inference.*

Newton was enabled to proceed and to write his *Principia* because he already possessed, or had the power of discovering, general quantitative formulæ, expressing in abstract terms the universal modes, according to which the operation of gravity varies according to various conditions of mass, distance, and so forth. By the deliberate application of these formulæ he ascertained how it ought to work in the case of the moon and the earth, and found his results congruent with known facts. This is one of the instances in which the use of abstract formulæ is greatest and most conspicuous. It is so, because it not only formulates a general relation, but also formulates with quantitative precision the general laws according to which its application varies under varying circumstances. When on the other hand we consider such general formulæ as constitute the major premisses of the specimens of syllogistic reasoning which are commonly given in books on Logic, the value of the abstract formulation is much less clear. In point of fact we can for ordinary purposes usually dispense with a major premiss altogether. When it is introduced its chief utility is that it enables us to criticise our own pro-

cedure by examining our assumptions. We go back from the abstract formula to collect and compare particular cases, with the view of justifying, rejecting, or limiting.

We cannot, of course, here investigate the origin of these abstract formulæ. Suffice it to say that they depend on express comparison and on the use of language.

LORD BACON'S DOCTRINE OF FORMS.

By R. J. RYLE, M.D.

FOR elucidating Lord Bacon's doctrine of Forms we must of necessity be chiefly guided by his own exposition of his doctrine, and by the examples to which he himself refers.

Some assistance, however, is to be derived from two other sources. We may examine the doctrine to which Bacon opposes his own, and we may compare with these the writings of certain authors who succeeded Bacon, and who were more or less influenced by him.

Bacon himself leaves no doubt that the origin of his own phraseology with respect to Forms is to be found in Plato; and although his attack is primarily an attack upon the schoolmen, yet the great representative of the theory which he desired to distinguish from his own is Plato. Now we, at the present day, aided as we are in our judgment of our predecessors by the perspective of time, may not unnaturally think that Bacon was somewhat unjust both to Aristotle and to Plato. I do not seem to find in Bacon's allusions to Plato any recognition of the fact that Plato not only was a great poetic genius (for of this Bacon was quite sensible),* but that he is often but half-serious in his speculative sallies. Probably most modern readers would accept Mr. Pater's expression of opinion as substantially true when he tells us that "Platonism is not a formal theory or body of theories, but a tendency, a group of tendencies,—a tendency to think or feel and to speak about certain things in a particular way"; and would agree with him in describing the so-called theory of ideas as being "itself not so much a doctrine or theory as a way of regarding and speaking of general terms, such as *Useful* or *Just*; of abstract notions, like *Equality*; of ideals, such as *Beauty* or the *Perfect City*; of all those terms or notions, in short, which represent under general forms the particular presentations of our individual expe-

* Platonem, tam-prope ad poetæ quam Aristotelem ad sophistæ partes accedere.
—*Cogitata et Visa*.

rience" *; or, to use Plato's own frequent expression (borrowed from his old Eleatic teachers), which reduce "the Many to the One." A modern reader may, I believe, without injustice to either Plato or Bacon, discover more resemblance than difference in their doctrines of Forms.

But discipleship is always ready to harden into rigid formulæ the dicta of the Master; and it must be admitted that the writings of Plato contain many statements concerning Ideas or Forms which lend themselves to such treatment. So, when the spirit of literalism has done its worst, we find the theory of ideas spoken of as a theory concerned with a sort of ghostly world of invisible objects. The Ideas are said to be self-existent, eternal, unchangeable. Only Ideas have the character of real existence in their own right.

Finally, this world of forms is essentially an intelligible (as opposed to sensible) world, and it can have being independently of, and apart from, the world of sensible things.

Yet, if such expressions are misleading as representations of Plato's true meaning, it must be confessed that he has often given occasion for such crude interpretations.

We may wish to recognise, for instance, in the allusions to astronomy in the Republic merely a genuine appreciation of theoretical or mathematical as distinct from simply observational and empirical stargazing, but we cannot imagine the Herschels or Sir G. Airy speaking of celestial positions and movements as nothing better than curious diagrams which fell in their way, and which were of service to them in their study of some (so-called) true revolutions which were *not* revolutions of planets, or of some real velocities which were *not* the velocities of carefully-observed heavenly bodies. Greenwich Observatory would have been meaningless to one who advised men to let the heavenly bodies alone if it is their design to become really acquainted with astronomy.

Probably if Socrates could defend himself against the Baconians he would have to admit that, in his vigorous assertion of the claims of the intelligible, he had treated the sensible with disdain because his own great concern always was with the way in which men were to set about right thinking and doing. Bacon's great object was something else. It was to show how men might reach a kind of knowledge more sure and more fruitful than any which had yet been attained, and he found the way blocked by doctrines which had been originally, no doubt, introduced in the interest of Logic, and Psychology, and Ethics, but which had become the source of the wildest fictions in the domain of physical science.

* Pater, "Plato, and Platonism."

In his own doctrine of Forms Bacon seems to have intended at once to dissipate one of the principal confusions of this kind, and to inculcate what was, from his own point of view, an important process in scientific method.

In the *Novum Organon* it is important to remember that we have a very carefully-composed work which yet expressly declares itself to be not a philosophical system. We are more likely to miss than to catch Bacon's intended meaning if we look for anything like recondite speculation in his teaching. On the other hand, we *may* look for a gradually-developed idea, the significance of which is not obvious from the first hints of it, among the Aphorisms, but which is to be discovered by a comparison of scattered statements. The several Aphorisms are doubtless purposely arranged. It seems, therefore, that we may derive some light from the setting in which Bacon (an artist in literary composition) plants his allusions to Forms.

In the fiftieth Aphorism of the first book we are told that "those things which strike the sense outweigh those which do not do so directly, and that all true interpretation of Nature is brought about not by sense itself but by instances and fitting experiment."

On this depreciation of mere sense follows the fifty-first Aphorism with the apparently abrupt declaration that the human Intellect is by nature prone to abstractions, and that to dissect Nature is better than to resolve her into abstractions. We should rather, he goes on to say, consider matter its constitution and changes of constitution, its "simple action" and law of action or motion, for Forms are figments of the mind, *unless we choose to name these laws of actions Forms*. ("Simple action" (*actus purus*) appears to be the Latin equivalent of *ἐνέργεια* as opposed to *δυναμεις*).

Here, then, we have the suggestion that the name Form should be retained to stand for the *Law of operation or reaction*, and that a completed science is to include more than simply-observed properties and is to extend to those which are inferred. Further on, after detailing the Idols he again alludes to Forms, where he says that some hold it to be beyond human power to discover Forms, or the true differences of things which are really laws of "simple action." He would seek the Form and find it in the sensible, though sense alone does not reveal it.

Coming next to the opening paragraph of the second book we have the noteworthy passage which tells us that "to discover the Form of a Nature (*i.e.*, of a characteristic quality or property), or its true difference, or the *Natura Naturans*, or the *Fons emanationis*, for these are the nearest descriptions of the thing, is the work and aim of human knowledge."

This passage seems to be quite consistent with those in the first

book. The Law of the *actus purus* or reaction (and this Bacon seems to have seen would be found ultimately to be dependent upon motion or to be expressed in terms of motion) is that which is in a logical sense the true difference of a given character or set of properties.

In other words, he would say the law of the mode of action of anything is that which is the source of any attributes it possesses.

Now, the aphorism here noticed is evidently intended as an amplification of the fifty-first Aphorism of the first book, to which reference has been made, for he goes on at once to the subject of the constitution and changes of constitution of matter. Two subordinate objects, he says, of great importance are "the investigation of 'latent processes' in all cases of generation and motion, and of 'latent structures' in all cases of bodies at rest."

That Form is equivalent to the law of the ultimate constitution and characters of a body (in the case of substances) appears from the continuation of the second book. After mentioning with approval the Aristotelian four causes, he observes that the "efficient" and "material" causes without the "latent process" to Form are trifling and superficial. The discovery of the "latent process" carried on from the manifest *efficient*, and manifest *material* to the inward Form, is the important thing, and in this phrase "latent process" we have, as we shall see, another allusion to the inadequacy of mere sense for the discovery of what takes place in any case of change. He goes on to say, "The man who knows the cause of any property, such, for instance, as that of whiteness or of heat in certain particular objects, only has an imperfect kind of science. He who knows only the efficient and material causes, which are variable and are but the bearers of the Form, may go on to make discovery in somewhat similar and previously prepared cases, but he will not stir the more deeply rooted boundaries of things. The man, however, who knows Forms grasps the unity of Nature of even the most dissimilar existences, and can reach results which would never even have been thought of."

In reading these sentences we cannot help being reminded of the history of our knowledge of the carbon compounds in Organic Chemistry, many of which have, in fact, actually passed through these three stages of study.

In the first stage they are known as being analogous to some previously known body. In the second place they are known as associated with certain sources or modes of production, and in the last their true Form, which in this case means their chemical constitution and true formula, is known.

A further clue to the signification of Form in Bacon's writings

is given by the description of its character in the fourth Aphorism of the second book. The Form of a quality or Property, he says, is such that when it is given, the quality in question is present, too. When it is removed the quality or Property vanishes, and, lastly, it is such that it derives the given quality from some source more general than it is itself. If we take as our example of Form the molecular, chemical constitution or formula of a body, it will be seen that these conditions are complied with. With this modern example in our mind's eye we may turn to the next illustration which Bacon gives us of his doctrine.

The aim of human knowledge being the discovery of Forms, the aim of human power, or (as we may say) the practical aim, where bodies are concerned, is to generate and superinduce upon a given body a new Nature or Natures. Here we find ourselves upon the borders of the land of Alchemy. The Hon. Robert Boyle had not yet criticised from the point of view of the experimental chemist the Aristotelian and alchemist doctrine of elements (a work which was accomplished by him about forty years later than the publication of the *Novum Organon*), and accordingly we must recognise in Bacon's physical doctrines the original conception of Empedocles of Agrigentum, as modified and systematised by Aristotle and his successors. The fundamental doctrine of Alchemy expressed it somewhat in the following way.

Taking Air, Water, Earth, and Fire as the "elements" which formed the basis of the world, the view taken of these elements seems to have been, that they were not what, in our way of speaking, we should call different bodies or kinds of matter so much as different properties implicit in, and carried by, one original substance. The chief qualities of these elements (the "*primæ qualitates*" of the later scholastics) were those of warmth, coldness, dryness, and moisture. Each of the so-called elements is characterised by the possession of two of these properties, air being warm and moist, water moist and cold, earth cold and dry, and fire dry and warm.

All the varieties therefore met with in the material world were ascribed to properties (or rather to "elements" having these several attributes) inhering in matter.

Now it was a matter of experience that the qualities of heat, moisture, and so on, are transferable from one object to another; and the transformation of one substance into another was therefore naturally supposed to be merely a question of the adroit transference in due proportion and admixture of the aforesaid qualities. For example, the transformation of water into air seems natural enough, since both have the property of moisture, and cold (which water has,

but air has not) can by means of heat added to it be changed into the other of the two chief properties of air.

In this way, by a method of permutations and combinations, it would seem no very hard matter to generate and superinduce a new Nature or Natures upon a given body. Bacon gives us two processes by which in practice it may be sought to bring about the transformation of bodies. The first process takes a body to be a collection or combination of simple Natures. Thus, he tells us, that in Gold there are met together Yellowness, Malleability, Ductility, certain modes of behaviour in respect to heat, and so on.

One process then starts from the Forms of certain Natures or simple properties. For, says Bacon, he who is acquainted with the Forms of Yellowness, fixidity, ductility, and so on, and with the modes of superinducing them, together with their gradations and methods, will see to these properties being united together in some one body, and thence its transformation into gold may follow. The chief difficulty, he goes on to tell us, is that of uniting so many Natures, for they do not combine readily, excepting in the ordinary paths of Nature.

Now all this means, if we turn Bacon's language into present-day phraseology, that such attributes as yellowness, ductility, a given degree of hardness, and so on, are to be considered as transferable qualities, which may be removed from one object and superinduced upon another, just as, in the Empedoclean system of Alchemy, moisture may be driven from one body into another. Bacon, in short, in describing this rule or process for the transformation of bodies is in the same box with the schoolmen who were the object of his wrath for their separation of Form from Matter. He advocates the retention of the word Form, and tells us that "in Nature nothing really exists except individual bodies exhibiting pure individual acts according to law," which Law, with its corollaries, he would designate by the name of Form, yet still he fails to realise that such attributes as yellowness and ductility are only constituted by particular modes of reaction or relation of a body to particular conditions or bodies. In this respect he is still among the Alchemists. He has not learned the lesson which was so emphatically insisted on by Boyle and Locke, that the *Nature* of a body means nothing more than its relations to other bodies, or to our senses.

But Bacon has another process to offer us for the transformation of bodies, which has a more modern stamp about it. The rule for this method, he says, depends upon the discovery of the "*Latent Process*." It is not based upon simple Natures, but has to do with concrete bodies, as they are found in Nature, in its ordinary course.

Here our inquiries are concerned with such questions as, 'From what sources and by what processes is gold or any other metal developed or generated'? What are the steps in the development of animals and so on? What are the stages of the phenomena of nutrition? and the like. Of this method he remarks (and the history of the sciences since his day fully justifies the opinion) that this method appears to be more expeditious, to be nearer at hand, and to yield more promise than the other. By the phrase *Latent Process* Bacon would have us to understand the continuous imperceptible series of changes (compositions, decompositions, and so on) by which the objects in Nature are being formed and transformed. By the term *Latent Structure* he would also have us to understand the ultra-sensible composition of bodies. In his figurative language, to learn the true textures and structures of bodies we must pass straight from Vulcan to Minerva; in other words, we must ascertain by inductive inference from experiments how objects are made and unmade. The ultimate details of process and structure are ultra-sensible.

In the ninth Aphorism of the second book, Bacon takes us into somewhat different ground. The two different rules or methods for the transformation of bodies correspond, he holds, to a true division of philosophy.

"The enquiry into Forms which in reason at least, and by their own right are eternal and unchangeable, may constitute Metaphysics, and the enquiry into Efficient and Material Causes, Latent Processes and Latent Structure may constitute Physics." We may here advantageously refer to the *De Augmentis*, which was published three years after the *Novum Organon*, and which expands somewhat the opinions there given. In this later work he proposes to class together under the heading of Metaphysic the investigation of the Final Cause and of the Formal Cause. The investigation of the Final Cause, except where human beings are concerned, is only a source of error in the study of the physical sciences, and he tells us that many have despaired of the discovery of Forms. Yet (he proceeds to add) it is clear that "Plato, a man of sublime genius, whose view comprehended all things as one looking from a high cliff, saw that Forms are the true object of Science, though he lost the fruit of this conviction by taking Forms to be divorced from Matter instead of being definitely realised (*determinatas*) in Matter; whence it came about that he fell into theological speculations, and this infected and soiled all his natural philosophy. If, however, we are serious and diligent we shall have no difficulty in ascertaining what are those Forms the knowledge of which may be of such value to man."

"Inquiry into the Form of a Lion, an Oak, Gold, Water, or Air, is but waste of time. But to investigate the Form of Density, Rarity,

Heat, Cold, and the corresponding Material Constitutions and Motions, which are not many, and which bring about, and are the bearers of the Essences and Forms of all substances, this it is which is the aim of our endeavour."

To show what is the distinction he has in view in this division of philosophy into the physical, which has to do with the efficient and the material, and the metaphysical, which includes the formal cause, he supposes an enquiry into the Form of the Whiteness of snow or of foam. "The first answer would be, if the question is raised as to its cause, that there is an intimate mixture of air with water. And this is true enough. But this does not constitute the Form of the Whiteness, because we can get the same sort of Whiteness by a mixture of air with powdered glass or crystal.

"So far we have only learned the Efficient Cause, which is nothing more than the bearer (*vehiculum*) of the Form.

"But if we refer to Metaphysic we shall find something of this sort, that the admixture of two transparent bodies in certain particular optical positions constitutes Whiteness."*

Now, it would be hardly fair to judge of the aim which Bacon seems to have set before himself in this classification of philosophical study (or, as we should say, scientific study) by the character of his illustration.

Remembering his criterion of a Form, that it must be present when the given quality is present, and absent when it is absent, and that it must "educe" the quality by means of a more general principle, we can see that his attempt is to find a "law of operation" or "a true difference" by which to account for the whiteness of snow, which shall not merely be a particular cause, but which shall be a general principle of universal application for the explanation either of snow whiteness, or of any similar whiteness. Of this attempt it can only be said, that, like his great predecessor, Roger Bacon, he failed from lack of that knowledge which Sir Isaac Newton's investigations were the first to give. Some remarks which he makes in the *De Augmentis* (cap. iv) on the distinction between the Physical and the Metaphysical (as he understood the words) are here very much to the point. "Physics, he tells us, deal with what is immersed in matter and is variable, Metaphysics with that rather which is abstract and constant." Again, "Physics take account in Nature only of existence, movement, and natural necessity."

But Metaphysics "deal with Mind and Idea (*mentem et ideam*)."

With this we may fairly compare the reiterated statement, that "Forms are but figments of the mind unless we determine to name these laws

* "Portionibus eorum opticis simplici ordine sive æqualiter collocatis."

of action Forms." It would seem, therefore, that what he means to teach as to "Form" under the designation Metaphysic (when distinguished from the Physical, which is concerned with the efficient and material) is that the search for Form is the search for a common principle or law of action which is present in any one of any number of instances in which the given quality occurs. It is, in his words, at the same time "abstract" and "constant."

On the other hand, the various Physical conditions (such, for example, as the powdered ice, glass, or crystal in the case of Whiteness) are, to quote his words when describing Physics, "*penitus in Materie mersa et mobilia*," or, as we might say, associated with ever-changing material circumstances.

Lastly, in trying to arrive at a consistent conclusion as to what Lord Bacon meant by Form we must study his most fully elaborated specimen of the inquiry after Forms which he gives in his well-known description of an inquiry after the form of heat. In the course of that inquiry he once more repeats, "When we speak of Forms we mean nothing more than those laws and determinations of pure action which ordain and constitute any simple Nature as Heat, Light, or Weight.

"And so the Form of Heat is the same thing as the law of Heat. But if anyone should think that our Forms are somewhat abstract in that they combine and join what is heterogeneous . . . it is most certain that these things, however heterogeneous or distinct, agree in that Form or Law which ordains heat (*quæ ordinat calorem*)."

Now, we may not unnaturally ask whether this conception of Bacon's meaning in his doctrine of Forms corresponds with any more familiar and less technical principle of the sciences of our own day. In the present essay it has been argued that by Form Bacon meant something more than "cause"; and that he meant more than to distinguish between "primary" and "secondary" qualities of bodies.

Each of these interpretations have found their defenders, but neither of them seem quite to do justice to the richness of Bacon's far-reaching doctrine.

The passages which have been referred to, when taken together, all seem to indicate the same conclusion, which is, that Bacon was more of a Platonist than he thought he was.

His inquiry after Forms is a striving ever to reduce the Many to the One. A law of action on which a quality depends, which is abstract and constant, no matter how varied the concrete particular instances of the given quality may be, which, in his own phrase, is Metaphysical and not Physical, because it is an affair of Mind and Idea (*tractat mentem et Ideam*) is closely correspondent with at least one good usage of the much abused word Law in modern

science. At times we speak of laws of Nature as statements which simply express a given relation. For example, the volume of a gas is inversely as the pressure. At times we wish, by the use of the word law, as opposed to chance, to indicate the presence of an unvarying routine. But there is another, and as it seems to me, a more fundamental signification which the word law often bears, which leads us straight to Bacon's Forms. Take, for instance, the following passage from a lecture of the late Professor Helmholtz on the "Aim and Progress of Physical Science":—

"To find the *law* by which they are regulated is to *understand* phenomena. For law is nothing more than the general conception in which a series of similarly recurring natural processes may be embraced. Just as we include in the conception 'Mammal,' all that is common to the man, the ape, the dog, the whale, &c., so we comprehend in the law of refraction that which we observe to regularly recur when a ray of light of any colour passes in any direction through the common boundary of any two transparent media."

We must remember, Bacon was a man of letters rather than a man of science. Moreover, he stood at the parting of the ways, in the history of human thought. He had not a great familiarity with the facts of physical science which Copernicus, and Kepler, and Harvey had made their own by daily intercourse with them at first hand. He was not quite of the new times, nor yet of the old, and, as a writer, he had some defects among his much more conspicuous merits.

There is no doubt as Harvey is said to have remarked, that "he wrote philosophy like a Lord Chancellor." Had he given us a systematic exposition, after the manner of Locke or Descartes, we should have less difficulty in presenting to ourselves the outline of his doctrine. Writing, as he does, in the form of detached aphorisms, there is a lack of continuity in his discussion which, while it adds to didactic effect, detracts from the logical coherence of the whole.

Moreover, his fondness for eccentricities of manner or phrase, and his love of figurative expression make him more easy to remember than to criticise. Accordingly there is room among the generalities of his doctrine for many interpretations. But among these, that which I have here offered with regard to his doctrine of Forms, seems to me upon the whole to give the best expression to his teaching.

HYPOTHESIS.

By J. H. MUIRHEAD.

1. *Treatment of Hypothesis by English Logicians.*

JEVONS begins his chapter on Hypothesis (*Principles of Science*, p. 504) with the remark that "All inductive investigation consists in the marriage of hypothesis and experiment." This has not always been the view of English logicians. Bacon's objections to hypothetical anticipations of Nature, and to the deductive method in general, are well known. Newton's statement of the law of gravitation was accompanied with a self-denying ordinance in respect to hypothetical causes. Along with the great discoverers of his own and the succeeding age, he would undoubtedly have disclaimed the *a priori* method of mediæval thought, and would have identified with it a process the essence of which was to start with an unverified assumption, and go on to deduce consequences from it. And this view was thought, at a later date, to be established on a sound philosophical basis by the speculations of Locke and Hume, as to the source of all our knowledge. It is true that, try as he would, Bacon was unable to exclude deduction from his own method, that his great contemporaries and successors, who had already entered on the modern epoch of scientific discovery, consistently employed methods which the prevailing philosophy renounced, and that Newton himself propounded hypotheses in the light of which his celebrated disclaimer bears the appearance of irony. But this only shows that the methods these investigators employed were much in advance of the means they possessed of analysing them. And it remains true that the attitude of English logicians towards hypothesis during this whole period was one of suspicion and hostility. It is not till we come to our own time that the important place in all scientific investigations of the preliminary assumption, the deduction of the consequences which must flow from it, and the comparison of these with actual fact, was recognised.

The reaction against the purely empirical method is clearly marked in J. S. Mill, who devotes a large section in the middle of his *Logic* to a description of the deductive method, and to defining the place of hypothesis in science. Jevons gives him credit for the part he took in initiating this reaction, but justly observes that his conclusions in this part of his system are inconsistent with his disparagement of the deductive process in the early part of his work, and his continual appeal to inference from particular to particular as the true type of

reasoning. "Mill," he concludes, "would have saved much confusion of thought had he not failed to observe that the inverse use of deduction constitutes induction."

Jevons himself, as we have already seen, cannot be accused of undervaluing the "inverse method." He is too much of a mathematician to permit his psychological empiricism to invade the sphere of geometry and formal logic. In his view the deductions of these abstract sciences take their place beside the direct intuitions of experience as types of certainty. Similarly, he has too keen an insight into the real processes of scientific thought to assign to the deductive method any subordinate place in physical investigation. "There are four different steps," he says (*Logic*, p. 79), "in inductive reasoning: first, preliminary observation; second, the making of hypothesis; third, deductive reasoning; fourth, verification." On the other hand, Jevons shares with Mill the philosophical assumptions of Locke and Hume, and we cannot be surprised if, in spite of the above contentions, his own theory of hypothesis turns out in its later stages to be infected by them. His difference with Mill is founded on no thorough-going analysis of the nature of truth and the grounds of certainty. Accordingly, when, leaving mathematical and quasi-mathematical science, we come to the application of induction to concrete Nature, we not only find no attempt to reconcile the acknowledged hypothetical character of scientific method with the appeal of the Empirical Philosophy to simple intuition as the only test of truth, but have the contradiction emphasized in a theory which gives up certainty in physical science as an unrealisable ideal. According to this theory, Perfect or Complete Induction is not to be looked for (as we might expect from the above quoted views as to the nature of induction in general) in the establishment of hypothesis by deduction and verification, but in that process of complete enumeration which Mill rejected as the mere summation of singular propositions. As compared with the certainty achieved by this latter process, the result of induction in Mill's sense ("proper," as opposed to "perfect," induction) can never amount to more than a balance of probabilities. "Nature," to quote a well-known passage (*Principles of Science*, p. 150), "is to us like an infinite ballot-box, the contents of which are being continually drawn ball after ball, and exhibited to us. Science is but the careful observation of the succession in which balls of various character present themselves; we register the combinations, notice those which seem to be excluded from occurrence, and from the proportional frequency of those which appear we infer the probable character of future drawings." In other words, the truth of even the best supported hypothesis is problematical. It could only be finally

established by the exhaustive consideration and rejection of an infinite number of all possible rivals. Even then there would still remain another ground of uncertainty. For there is always the possibility that the Power which created the universe at the first may introduce a change into the order hitherto established in the experience of men. What we call the uniformity of Nature is merely an assumption, and, like all other assumptions in this field, rests in the last instance on a comparison of conflicting probabilities.

Beginning with a rooted distrust of hypothesis, English logic seems thus to end in establishing it as the only scientific method, but in doing so comes very near denying the possibility of scientific knowledge altogether. Jevons saved himself from this conclusion by appealing to the deductions of geometry and formal logic, and to the intuitions of sense as a ground of certainty. But it is easy to see that he has no right to these exceptions. For it is evident that mathematics and formal logic rest upon assumptions in just the same sense as do the natural sciences. It was Mill's merit to see that this followed from his premises. It is no merit in Jevons, but merely indicates confusion of thought to ignore it. No proof can be offered of the axioms of geometry or the formal laws of identity, contradiction, and excluded middle, that cannot be claimed for the uniformity of Nature and for well-grounded hypotheses. No doubt can attach to the latter which does not infect the former. If, for instance, it be said that we cannot conceive of a thought which is not governed by these axioms and by the formal laws, this undoubtedly is true, but it is equally impossible to conceive of a world in which uniformity does not exist, or of a knowledge of it which does not rest on hypothetical interpretations. And if, giving up the deductive sciences, Jevons falls back with Mill on the intuitions of sense, it may be shown that these, equally with the generalisations of science, rest upon conceptions of the mind, and are hypothetical in the same sense. The perception which, to the early English psychologists, seemed to be an immediate datum of sense is in reality a construction by the aid of conceptions whose only ultimate justification is that they are necessary to give coherence and consistency to our experience. Spatial position, temporal succession, substance and attribute, cause and effect, the identity of the object of intuition with itself, are such conceptions. They are assumptions in Jevons's sense, and if we were to adopt his criterion of truth, would merely at best be the most probable of an infinite number of possible ones.

Having reached this point, which the reader may construe at pleasure, as the destruction either of the possibility of certainty, or of the ballot-box theory of the nature of hypothesis, we are in a position to approach the subject for ourselves.

2. *The Nature of Hypothesis.*

The first conclusion forced upon us by the above criticism is that as a construction thrown out by the mind to give order and coherence to the data of experience, hypothesis does not differ essentially from other conceptions of the mind categories, axioms, formal or material laws of thought, class notions, universal or ultimate postulates of thought and action. Any conception may be called an hypothesis in the broad sense of the word in which it is used by Plato when he tells us that all scientific knowledge is hypothetical; by which he meant, not that it was indemonstrable, but that it rested on presuppositions, which could only be proved by being shown by philosophy to stand or fall with experience as a whole. The second conclusion is that the proof of a scientific hypothesis in the proper sense may be not less certain than the proof of any other conception, for it is to be sought for like the proof of all others in the extent to which it is successful in introducing consistency and coherence into our experience. The type of certainty here and elsewhere is not the so-called immediate deliverances of intuition. However emphatic and unambiguous these may seem to be, they are neither immediate nor are they ever accepted without a reference to the total experience in which they appear as moments or points of transition. Certainty is always mediate, and the specific characteristic of scientific hypothesis is just that it emphasises this mediacy by bringing it clearly into consciousness.

All this will become clearer as we proceed to examine in more detail the characteristics of hypothesis as a conscious process of scientific investigation.

While, as we have seen, hypothesis must in any true theory of knowledge be co-ordinated with the more elementary functions of thought, it is necessary for Logic to distinguish it from these as well as from certain subsidiary processes which are apt to be confounded with it. Moreover, within the process of hypothesis itself certain elements require to be distinguished from one another if we wish to obtain a clear idea of its essential nature.

In the first place, the conception must be sufficiently separable from the facts to admit of reasonable question before it is recognised by the logician as an Hypothesis in the proper sense of the word. This requirement is sufficient to separate it from those conceptions which we have already alluded to as the presuppositions of all experience. The Categories are hypothetical in the sense that they are conceptions supplied by the mind in the process of rendering its experience intelligible to itself. They are not Hypotheses in the sense that their rights can reasonably be

contested, except by one who is prepared to contest the validity of knowledge in general.

In the second place, the attempt to fit a conception to facts must have attained a certain degree of consciousness. This requirement disqualifies another class of conceptions. In the reaction against the mediæval method of deduction from *a priori* assumptions it was contended, as we have seen, that the true scientific attitude was perfect openness to the impressions of experience. If this is taken to mean that our assumptions, to be of any value, must be founded on observation, the advice of course was and always must be in place. But if it means, as it is sometimes with some justice suspected of meaning in the Baconian philosophy, that we ought to approach Nature with our minds a perfect blank as to what we wish to know or what we may expect to find, nothing could be more misleading. It is only when we approach Nature with a question that we can expect to get an answer. Only those who seek find. And seeking, as opposed to rummaging, consists of a series of guesses on the basis of definite knowledge of the conditions to be satisfied by the object of our search. Are all these guesses hypotheses? "Equilateral triangles are equiangular: are equiangular equilateral?" "Some of the planets and their satellites move from West to East: do all? and if so, why?" "Ranunculi are defined by characters, *a, b, c, d*; this flower has *a* and *b*: has it *c* and *d*?" These guesses are all, in the first instance, assumptions awaiting verification. Are they hypotheses in the logician's sense? It may be a question of language, and we must not be pedantic. Aristotle, would probably have called them *ὑποθέσεις* in the sense of assumed judgments. It may, however, serve for clearness to notice the distinction which Venn makes (*Logic of Chance*, c. ix, § 3, foll.) between such guesses in the mind of the scientific investigator and the class of assumptions recognised by the logician as hypotheses. Every scientific observer makes use of a multitude of such guesses, by far the greater number of which, if not still-born, survive only a few moments, and are hastily buried. A small proportion, after hovering for a moment in his mind in the form of surmises, without more delay take their place in the system of his experience as demonstrated truth. A few, on the other hand, by virtue partly of the conflict they give rise to between rival factions in his experience—some elements favouring, some opposing their claims—and partly of their importance to science in general, are admitted as a species of catechumen in the world of reality, and recognised as legitimate but unproven hypotheses.

A more difficult question is suggested by another class of conceptions which sometimes pass under the name of hypotheses but

which do not in all respects conform to the requirements laid down by the ordinary definitions. "An hypothesis," says Mill (*Logic*, Book III, c. 14, §4) "is any supposition which we make (either without actual evidence or on evidence avowedly insufficient) in order to endeavour to deduce from it conclusions in accordance with facts which are known to be real; under the idea that if the conclusions to which the hypothesis leads are known truths the hypothesis itself either must be, or, at least, is likely to be, true." If we accept the last clause as necessary to the definition we must rule out assumptions of the class known as "representative fictions." Of these fictions several species might be named. There are what might be called fictions of exposition. Clifford proposes it, as an explanation of the moon's motion, that she is a falling body, only she is going so fast and is so far off that she falls quite round to the other side of the earth instead of hitting it. This class need not detain us. They are not hypotheses in Mill's sense, for the test of them is conformity not to truth, but to the intellectual range of the reader.

More important and more difficult to deal with are what might be called fictions of simplification. These differ from the last in having a recognised place in the body of science. Their function is precisely analogous to that of legal fictions and if they are to be called hypotheses at all, they should be called emphatically "working" hypotheses. Their justification is that they work. A typical example is the assumption of a centre of gravity, the existence of which not only cannot be demonstrated but can be shown to be impossible. A similar fiction is implied in differential equations of the kind quoted by Lotze (*Logic*, p. 351, Eng. Tr.), where, as in the endeavour to reach the conception of a circle by means of that of the polygon inscribed in it, it can be shown that the sign of equality is untrue *until* we reach the limit where the sides of the polygon are infinitely small, and *when* we reach the limit the quantity in one side of the equation has become 0 and there is no longer anything to equate. Seeing that a working fiction of this kind need not be true, a conception which was once accepted science, but has become superannuated, will sometimes serve the purpose. Thus, as Jevons remarks, the Ptolemaic theory of cycles and epicycles, though long since pensioned off as a tenable hypothesis, may still be employed as a legitimate mode of subjecting the motions of the heavenly bodies to mathematical analysis.

A third class of representative fiction deserves to be mentioned at the risk of tediousness on account of its importance in the history of science and of controversy. I mean those which are not merely legitimate in science, but seem to be necessary if there is to be

science at all. The most conspicuous instance under this head is the assumption by mathematics of the existence of its subject-matters, space and number, distinct from the objects whose relations they express in the concrete world of experience. To the same class belong the molecules of the physicist, the atoms of the chemist, the sensations of the psychologist. This is not the place to discuss the nature and justification of these assumptions. Logic has done its work when it has assigned these abstractions to their true place as unavoidable fictions, and in doing so conveyed a much-needed warning against treating them as hypotheses for which a place has either to be denied or vindicated on the ordinary terms.

Finally, allied to the first class above mentioned and requiring merely to be named to be distinguished from hypothesis in the proper sense are illustrative supposals in which we are asked to "assume for the moment." Here there is, as a rule, no pretence that the conditions assumed are actual. The characteristic feature of this class is that an arbitrary abstraction is made from the conditions of experience resembling the arbitrary isolation of experiment with a view of bringing into prominence the consequences that flow from it.

3. *The Content of Hypothesis.*

From this attempt to separate hypothesis proper from kindred conceptions we may pass to consider the content of the former. The difficulty here is that it is of the essence of an hypothesis so long as it remains such to be in a constant state of change. What appears at first as the bare suggestion of a something which is necessary in order to explain the facts gradually clothes itself in the special form that reflection, as it advances, shows to be required in anything that is offered as a sufficient explanation. This difficulty will best be met by distinguishing between what, borrowing from Lotze, we may call the *postulate* and the actual content of the hypothesis itself: the form of the problem or the precise definition of the data and the form of the answer. The proof of an hypothesis consists, as we shall see, in the coalescence of these two elements in a new conception of the data as a system of interrelated parts, but it is characteristic of the earlier stages of an hypothesis that they fall apart: there is on the one side a rough outline of the facts to be explained, on the other a rude surmise as to the ground of explanation. It is true that no guess or hypothesis can be of any value which is not founded upon observation, but the observed facts are at first only vaguely apprehended and are only gradually defined as one after another of the elements of the problem are brought into clear consciousness

by the criticism to which the hypothesis itself is exposed as reflection advances.

I shall have occasion hereafter to illustrate more in length this process, which might be called the development of the postulate; meantime, it may be sufficient to refer to a well-known example. In the Introduction to the *Origin of Species*, Darwin tells us that at the outset of his investigations he devoted five years to accumulating and reflecting on all sorts of facts which could possibly have any bearing on his problem before allowing himself to speculate on the subject or note down the general results. He goes on to give a general indication of the steps by which the problem gradually took shape in his mind. In the first place he saw that it was not enough to prove that species were descended from other species instead of being, as popularly supposed, independent creations. "Such a conclusion," he says, "even if well-founded, would be unsatisfactory until it could be shown how innumerable species inhabiting this world have been modified so as to acquire that perfection of structure and co-adaptation which justly excite our admiration." Secondly, he soon arrived at a quite definite conception of the inadequacy of the common attempt to explain these variations by referring them to external conditions, such as food, or climate, or even the internal modifications of habit. Such an hypothesis, he tells us, could not satisfy the conditions imposed by the delicate adaptations of the structure of the woodpecker or the mistletoe to its functions. Finally he had the insight to see that the variations caused by artificial selection offered the best analogy to the natural varieties of species. "At the commencement of my observations it seemed to me probable," he says, "that a careful study of domesticated animals and of cultivated plants would offer the best chance of making out this obscure problem." Even before he permitted himself, according to his own account, to anticipate the answer, the problem had thus apparently acquired the quite definite form—Is there any procedure analogous to that of the breeder and the horticulturist by which nature can be conceived to select and perpetuate desirable variations? So closely does he here appear to have defined the postulate that to us, who look back upon his statements from the vantage ground of familiarity with his later conclusions, the answer seems ready to start out of the statement of the problem.

In considering the content of hypothesis in general, we may start from the distinction which Mill draws between the suggestion of an Agency and the suggestion of a Law or Mode of Operation. He seems to consider this to be an exhaustive account of the forms which scientific hypotheses assume. As an instance of the first, he

quotes the rival hypotheses respecting the nature of light, the one ascribing the phenomena to a fluid emitted from all luminous bodies, the other to the undulations of a material substance pervading all space. As an instance of the latter, he gives the different assumptions that were made as to the law of the planetary central force anterior to the establishment of Newton's law that the force varies as the inverse square of the distance.

In reference to this account it ought, in the first place, to be remarked that the distinction between an agent and a mode of operation is a vanishing one. Mill indeed has no sooner made it than he proceeds to whittle it away. An agent ought to be something substantial, yet Mill seems to contend in a subsequent passage (*see* p. 25, *fin.*, 9th ed., and the note on Whewell, p. 24) that the ether and the undulations with which it is supposed to vibrate, which he gives as an instance of such an agent, ought not to be taken as substantial existences, but are merely a figure of speech descriptive of the way in which light operates. And this view of the instance in question seems to be favoured by Jevons when he warns us against hastily identifying the ether which is supposed to undulate in light with the ether which is supposed to possess the attributes of a material substance and offer resistance to comets. It is, indeed, important to note that the chief problems in physical science as now interpreted concern quantitative determinations of material forces and substances, and that the mathematician may proceed in the discovery of the correct formula by a method analogous to that of the physical observer, but to say this is one thing, and to say that hypotheses are rightly classified in the way proposed, or may ever legitimately be said to have an agent for their content, is another. It seems better, on the whole, to take hypotheses so far as they are concerned with causes at all to refer to modes of operation than to substantial existences. Even in Mill's second instance of the corpuscular theory of light it might be pointed out that to say that light is fluid is merely to say that bodies operate in the way we call light by penetration and not merely by propagation of motion. If in reply it be said that we frequently do imagine to ourselves actually existing things as opposed to laws of action we open up a question which we shall have to return to at a later point (pp. 6 and 7). Meantime, it may be asked what precisely is meant by this contention. If by "things" we mean substances whose attributes are exhausted in the special relations required for the explanation of the facts we are considering, such existences are a contradiction in terms, inasmuch as the definition of a thing or a substance implies that it is of such a nature that it cannot be thus exhausted. If, on the other hand, we say that we mean concrete things with attributes or modes of operation other than

those which are needed to explain the phenomena under observation, the hypothesis, as we shall see, is of doubtful legitimacy unless we can point definitely to the lacuna in reality for which these supernumerary attributes are required. But, setting this doubt aside, and assuming that it is permissible to imagine concrete things otherwise unknown to exist, for the sake of those of their attributes which are necessary to explain the phenomena in hand, we have not in our hypothesis got beyond their attributes or modes of operation; for it is they and not the concrete thing that are required by the theory we have constructed and form the real content of our hypothesis.

Mill's treatment of this subject is misleading in a second respect. We have already seen that Mill shares to a great extent the suspicion with which early inductive logicians regarded hypothesis. This suspicion, together with the view just alluded to, that hypothesis is exclusively occupied with substances and the laws of their operation, lead him unduly to limit the range of its application. With a view, as he says, "to guard against the appearance of reflecting upon the scientific value of several branches of physical inquiry which, though only in their infancy, I hold to be strictly inductive," he makes a distinction between inventing agencies to account for classes of phenomena, and endeavouring, in conformity with known laws, to conjecture what former combinations of known agents may have given birth to individual facts still in existence. In conformity with this distinction he proposes to exclude geological inquiries into the origins of rocks, and Laplace's speculations as to the origin of the planetary system from the scope of hypothesis.

From what has already been said as to the essential identity of the procedure which Mill distinguishes as "strictly inductive," and the deductive method in which hypothesis has a place, it is obvious that there can be no real distinction between the theories in question and those which he has previously admitted as cases of genuine hypotheses. It is, of course, true that all of them have now advanced beyond the stage at which they can with justice be considered as mere hypotheses, but this cannot be taken to mean that there was not a time when they all existed in the form of suggestion, and were even consciously recognised as such. And this, we saw, is the characteristic mark of an hypothesis in the strictest sense of the word.

The important question is not whether these theories are formally different from such as are admittedly hypothetical, but how and at what point they passed from the stage of interesting suggestions to that of established theories. Before attempting the answer we have

still to notice the rules which have been formulated to restrain the licence of imagination in the invention of hypotheses.

4. *Rules defining Legitimate Hypothesis.*

The rules that have been laid down are:—1. The hypothesis must be required. 2. It must not contradict the laws of Nature. 3. It must be adequate. 4. It must be a *vera causa*.

These rules, it must be admitted, are apt to turn out, on closer examination, to be either trivial or mistaken. To the former class clearly belongs the warning against "gratuitous assumptions," contained in the first rule. In illustration of the second, Fowler quotes the theory that fossils were strewn on the tops of mountains by the Devil in order to cast suspicion on the Biblical account of the Creation. In cases of this kind we might dispense with a formal rule. In other cases the difficulty is to distinguish what are laws of Nature. (Thus, in opposing an hypothesis on this ground we have to make sure, as Jevons warns us, that the laws to which we appeal are themselves valid inductions and not assumptions, on the level of the mediæval maxim that Nature abhors a vacuum—which she does not appear to do if the vacuum is over 32 feet high, or that force can only act through a medium—which would have excluded Newton's theory of gravity as a legitimate assumption.) But on this point the rule gives us no assistance. The third rule lays down the requirement that the cause assigned for an event must be adequate to produce it. This rule clearly rests on the popular assumption of plurality of causes. An adequate cause is one which may have produced the given effect, but is not the only one which is able to produce it. If we reject this assumption, and hold that no cause can be adequate to produce the effect except that which is necessarily implied in it, and therefore the only possible one, the rule can only be admitted as the test to which the hypothesis must submit before it can claim to be demonstrated truth, and can have no meaning as a preliminary test to bar the way against fanciful suggestions.

There is a similar difficulty in assigning a precise meaning to the fourth rule, that the cause assigned must not only be such as, if admitted, would explain the phenomenon, but must be a *vera causa*. Newton's authority has won for this maxim general acceptance among logicians. But when we come to inquire what meaning has to be assigned to it we find that *quot homines tot sententiæ*. By some it is interpreted to mean that no cause ought to be assumed which is not already known to exist. If such a rule were accepted we might ask how any new cause could come to be discovered. Mill holds it to be unnecessary that the cause should be previously known to exist,

but requires, in terms of what he conceives must be the true meaning of the maxim, that the cause assumed must be such that its existence may afterwards be detected by independent evidence. If by independent evidence is meant direct perception, it can never be admitted that inaccessibility to sense-perception is a sufficient ground for rejecting what the conditions of experience force us to assume. Otherwise, as Mr. Bosanquet points out, we should have to reject the centre of the earth and the other side of the moon as legitimate conceptions. If on the other hand we mean by independent evidence a train of reasoning founded on the requirements of a science other than that within which the phenomena under observation fall, it may again be doubted whether this is a necessary condition of legitimate hypothesis. The conception of a luminiferous ether is, I presume, universally admitted as a legitimate hypothesis, and will continue to be so even on the assumption that it is non-resistant, and that it cannot therefore be independently proved to exist from the side of astronomy by appeal to its retarding effect upon the motion of heavenly bodies. Hence a new meaning has to be assigned to the *vera causa*, and it has been proposed to define it as "A thing or occurrence in a thing whose reality we are thoroughly convinced of from the necessity of reconciling observed data" (Bosanquet, *Logic*, II, p. 159). But in giving this definition it ought to be noticed that we have again passed from the test which should be applied to an hypothesis before it be admitted as worthy of serious consideration at all to the test which it must satisfy before we can finally accept it as a demonstrated theory.

From the difficulty which we thus see is experienced in endeavouring to lay down the *a priori* conditions of legitimate assumption we may be led to suspect that the whole attempt is a mistake and has its origin in the early misunderstanding as to the essential nature of hypothesis already sufficiently noticed.

Leaving, therefore, the attempt to find meaning in the meaningless we may now pass to the question of the nature of the process by which an hypothesis passes from the probationary to the probate stage of its existence.

5. *The Aim of Hypothesis.*

The question is by what test are we to decide the claims of an hypothesis to rank as demonstrated truth? As this test can be nothing other than the extent to which it fulfils its aim or function, a short statement of the nature of that aim will be the best introduction to the answer. Everyone will agree that the aim of hypothesis is explanation, but this does not help us until we understand what mode

of apprehending a phenomenon constitutes an explanation of it. The common answer would be the apprehension of it as the effect of a given cause or an instance of a given law. The answer is correct so long as we take care to understand by cause or law not merely another phenomenon or event which merely precedes it. So long as the cause or operative principle is conceived of as standing outside its effect as a mere event in time, however close, invariable, or unconditioned the connection may be conceived of as being, it cannot be said to explain it. Not until "cause" and "effect" disappear as mere events, or if retained are seen to be a mere arbitrary division in a continuous process, or the arbitrarily chosen names for different elements in a systematic whole, can we be said to have an explanation in any true sense.

Thus, if the question is what is the explanation of water, the answer is the union of two parts hydrogen to one of oxygen. This is true, but not in the sense that the formation of water as one event has been referred as a consequence to an antecedent event, the union of oxygen and hydrogen. These are not two distinct events. If they were there would be no explanation. The oxygen and the hydrogen pass into the water, the water *is* H_2O , the effect *is* the cause. It is not the separation of the whole phenomenon into two events that gives us the explanation, but the apprehension of the substantial unity of the elements under the difference of form.

Or, to take a more complicated example more akin to our subject: a shot is fired, a man drops dead. To the passer-by the one event seems to be explained by the other. But let it be suggested that the man who has just dropped is subject to apoplectic fits. Clearly the explanation is inadequate. It will remain so even though marks of a wound near the heart are visible. Apoplexy may still have been the cause brought on by fright. The explanation of the death as the direct result of the shot is only complete when the path of the bullet is seen to be incompatible with the continued action of the heart, and when the phenomenon, instead of being marked off into two or more discontinuous events as at first, has resolved itself into a continuous development, and is recognised as a series of changes in a material medium whose elements act and re-act on one another according to predetermined laws. By the time that this has happened two things have become obvious from the point of view of the logician: (a) the circumstance alleged in explanation has been proved able to account for the facts: the cause to be adequate to the effect; (b) it alone can account for them: the particular effect demands the particular cause.

The process by which, in the case of any hypothesis, certainty is

obtained on these two heads is the establishment of the hypothesis, and we have now to consider wherein precisely this process consists.

6. *The Verification of Hypothesis.*

Our previous discussion of the way in which the postulate is developed has already brought before us one side of this process. The hypothesis undergoes a series of corrections and extensions by which it is brought into closer and closer connection with the facts that are to be explained. In respect to the corrections which are thus made upon the original suggestion, there is no essential distinction between what would generally be acknowledged to be a mere correction of the same hypothesis or the substitution of a better one for it. Rival hypotheses, if they are legitimate at all, must imply many common assumptions, and it is a matter of degree whether we ought to treat them as varieties of the same or as different hypotheses. The corpuscular theory of light had in common with the undulatory the important point of assuming that light was motion. The question between them was what it was that moved, and it is logically indifferent whether we regard the crucial experiment which proved that it was the medium and not an emission that moved as having effected an amendment upon the motory theory of light, or as having established the undulatory as against the corpuscular. The advantage of the former of these two ways of regarding the matter is that it enables us to treat the history of a theory as a continuous development rather than as an irregular skirmish with accidental opponents. The steps in this development are represented by the failure of the accepted hypothesis to explain facts which, when we take it in an amended form, offer no difficulty. Such facts are the *instantiæ crucis* of the logicians. On the above view they are not so much finger-posts at a cross-road as stage-houses on the highway of explanation. They mark the places where a change has had to be made: an old assumption abandoned, and a new one substituted in its place.

Illustrations of such *instantiæ* are the successive stages through which the theory of the fertilisation of plants developed. So early as 1682, Grew announced his belief that for the purpose of fertilisation the pollen must reach the stigma. This he took to be directly effected by means of the proximity and position of the pollen masses. This hypothesis was confronted a century later by Sprengel with the case of flowers like the orchid and the blue-flag, in which, owing to the position of the stigma and the pollen, contact was impossible. These cases suggested to Sprengel that union was effected by insects. Darwin gives him the utmost credit for this dis-

covery, and for the way in which he worked it out. Sprengel seems, however, to have confined his attention to the single flower, and to have overlooked the problem as to how fertilisation was accomplished in cases like that of the sage and the English arum, in which the pollen and the pistil reach maturity at different times. This *crux* marked the point at which Sprengel's theory of insect fertilisation passed into Darwin's wide-reaching speculation as to the cross-fertilisation of plants.

This is the one side of the process under discussion. The hypothesis is secured in the rear. It is put forward as explaining what earlier hypotheses cannot explain. There may be much yet which it has not explained, but there is nothing which can be shown to be inexplicable by it. But this is not enough. We have to show, not only that the assumed cause is able to produce the given effects, but that no other cause can. Not only given *a* then *b*, but given *b* then *a*. It is here, as we have seen, than Jevons finds induction defective. It fails, and necessarily fails, to give us the required assurance. It is still open to anyone to maintain that our result is only probable. In the vast reservoir of Nature there may be an unknown multitude of causes which are all adequate to explain the given effect. As this is to misconceive the nature of scientific explanation, and to substitute for the positive movement of thought by which the cause passes over into the effect, and is seen to be one with it, the merely negative process of securing it against rivals from without, it is important to notice the precise nature of the movement of thought which completes the proof of an hypothesis.

It consists in the counterpart of the process I have just described as the development of the hypothesis, and may be called the individualisation of the facts. Not only does the hypothesis undergo modification as it is gradually "moulded" to the facts, but the facts themselves undergo a similar process of transformation. New facts emerge as deductions from the hypothesis, and a new form is given to others that have long been familiar. The former of these effects is noted by most of the logical writers who treat of the subject as one of the chief means of verifying an hypothesis. By enabling us to forecast properties or events, the hypothesis affords striking evidence of its truth. The predicted discovery of the planet Neptune is a frequently quoted example of the deductive method. But the power of prediction is only a function of the power of individualisation of which I am speaking. It is founded on the correlation of facts hitherto apprehended in isolation, and it is this correlation, and not the power of prediction founded upon it, that is the source in the mind of the discoverer of the assurance that he is in possession of a *vera causa*. That it is a sufficient source I shall

try to make evident by an example. I have elsewhere referred to a child's picture-puzzle as analogous to the problems of Nature. The task is to project a scheme which will reduce a confused mass of detail into an orderly system. Should the pieces be cubes differing from one another merely in the colour of their surfaces it is true that many patterns may be possible. A case of this kind would correspond to Jevons's instances from the ballot-box. But where the parts possess an individuality of their own, either by reason of the shape or the figures on their surfaces, there is usually only one way in which they can be combined.

The more concrete nature of the material secures us in this case against an unknown multitude of rival schemes. This is so also in Nature. The objects and events with which we are dealing exhibit characteristics that presuppose definite relations to others. The only proof, and the sufficient proof in the one case as in the other that the clue has been found, is that by means of it the elements arrange themselves in a coherent system, and in so doing undergo a process of individualisation which is also a transmutation. In one important respect the illustration fails, as all illustrations from artificial problems must fail, to represent the nature of scientific verification. In the system of nature the principle, if it is a true one, not only introduces law and order into a field where previously we had only a number of isolated observations, but brings the whole field into relation with other known laws, imparting to it as a whole a new significance as an illustration of a more general principle. The individualisation I have spoken of affects not only the elements within the given system but the system itself as a portion of a larger one. When it has been effected by the coalescence of the elements of hypothesis and fact, the verification is complete. There is no longer any sense in the suggestion that a different hypothesis is still possible. This is in reality equivalent to suggesting that the facts themselves may be other than they are. They *may*, of course, in the sense that anything *may* be anything else. But if no ground can be shown why we should hesitate to accept them as they are, the objection is "motiveless," and, if pressed, could be shown equally to apply to the data of sense and the deductions of formal logic and mathematics.

7. Illustration from Darwin's Speculations on Coral Islands.

The nature of this process as it actually takes place will best be seen in connection with a concrete example. I select one which has always seemed to me peculiarly complete. It is, of course, simplified and condensed.

In a passage of the *Naturalist's Voyage*, and afterwards in a separate volume, Darwin has expounded his theory of the origin of the coral formations in the Pacific Ocean. To the early discoverers these appeared to fall under three heads. First there were those that lay close into the shore, forming simply fringes of coral round about it. Next there were barrier reefs lying further out, and with deep lagoons between them and the shore. Finally there were the atolls or lagoon islands. These last were the most striking and were early made a subject of speculation. The typical atoll is a lagoon surrounded by a ring of coral reef. Outside, the barrier is exposed to the breakers of the ocean; within, all is quiet, and the first hypothesis was that these islands had been built up by the coral animals to afford themselves protection on the inner side. This did not meet the postulate, for so far from needing protection, the outside corals are found to grow more vigorously than the delicate branching kind that is found within. For this theory was next substituted the widely accepted view that they were built on the craters of submarine volcanoes. The attempt to account for the facts on this hypothesis brought into prominence further elements in the postulate. The *size* of some of them, which extend to over 50 miles in length by 20 in breadth, and the *form* of others, which consist of a number of little separate atolls, were seen to be incompatible with this assumption. A third theory was founded on the true observation that the corals which are most exposed grow most vigorously. Hence from an area of coral at the bottom of the sea, the outer edge would spring up most rapidly and hinder, by their protection, the growth of others inside. This theory, however, was defective in two respects. In the first place the coral is known not to be able to live and work at a greater depth than from 20 to 30 fathoms. How then are we to explain the formation in the depths of the sea of the foundations of rock and sand on which these atolls are erected? Secondly, no theory can be satisfactory which does not include in its explanation the whole three classes of related structure—the lagoon, the barrier, and the fringing reef.

The postulate for a satisfactory theory having been laid down, Darwin begins with the question overlooked by the last theory, that of the foundations. Three views are here possible—the infinite number of possible alternatives is a fiction of the mathematicians. Either these highlands in mid-ocean must be sediment, or they must have been uplifted, or they must have sunk down. The first is excluded. Deposits in the central and deepest parts of the Pacific are inconceivable. The second is also excluded by the fact that we have many vast areas thickly studded with atolls, all reaching to between twenty and thirty fathoms down. Whence these sym-

metrical submarine mountains? They are without parallel in Nature. The third alternative is left. The land must have sunk into the sea. This is the hypothesis with which Darwin starts.

It at once gives a clue to the leading features of the System. Beginning with the fringing reefs we see here no trace of subsidence. These lands are stationary or recently uplifted. The reefs are close into lands where they first were built at the necessary elevation. Next we have the barrier reefs. Here the land has been sinking, and as it sank the lagoon has widened, the reef still remaining above water, as the coral builders have been able to keep pace with the gradual subsidence. Finally the land has disappeared below the surface, and only the reef remains, giving us the third species, or the atoll.

All this corresponds to what Mill calls deducing the consequences. Taken by itself it may appear somewhat speculative. Does appeal to the facts offer direct evidence of the subsidence assumed? Yes, old cocoanut trees on the edge of the lagoon on one island are seen to be undermined and making ready to plunge in; the natives report that the foundation parts of a shed now below the tide mark stood formerly above it; here also earthquakes have been recently felt.

But it is not only the large features that are thus systematised. If the account given is true, many of the subsidiary features of these islands will now become intelligible. It is known, for instance, that the fresh water of streams injures the corals. Hence, in the fringe reefs there will be gaps where the streams enter the sea, and, if our explanation be true, the openings when thrown further out to sea by the subsidence of the land will face the head of the valleys formerly drained by the stream. This is found to be the case. Owing to subsidence at unequal rate of parts of the solid rock that underlie the reefs we may expect to find portions carried down below the depth at which the corals can live and build, and accordingly the reefs broken and irregular, and for the same reason we may expect to find reefs below the surface either "half-drowned" or altogether dead. All these phenomena are of frequent occurrence. Finally, there ought, according to the hypothesis, to be a certain order in the distribution of these different groups, the first of which (the fringe reefs) are upon land that is comparatively stationary or that has been recently elevated; the other two upon regions which are sinking. That this is actually the case is shown by Darwin on a coloured map on which the atolls and the barriers are tinted dark and light blue respectively, the fringes red. The blue are then seen to mass themselves together in different parts of the map, the red in other parts.

It is here that the hypothesis breaks away as above described (p. 9) from the limits of the system which it was formed to explain and gives further proof of its validity by uniting itself with the general theory of the process by which our continents and oceans have been formed. For, while we know from other evidence that the great continents are, for the most part, rising areas, the evidence of the coral islands goes to prove that the central parts of the great oceans are subsiding. "We see in each barrier-reef a proof that the land has there subsided, and in each atoll a monument over an island now lost. We may thus like unto a geologist who had lived his ten thousand years and kept a record of the passing changes, gain some insight into the great system by which the surface of this globe has been broken up and land and water interchanged."—(*A Naturalist's Voyage*, c. xx, *fin.*)

8. *Margin of Indeterminateness in Established Hypothesis.*

What we have said must not be understood to imply that an established hypothesis leaves no room for questions which may affect it in detail and even lead to important modifications of it. There may still be a wide margin of indeterminateness in two respects.

In the first place, while no fact can be pointed to within the special field of the hypothesis which can be proved to be inexplicable, a theory may yet leave many which are not yet explained. In connection with his great discovery of the law of natural selection, Darwin over and over again alludes to this distinction between facts which would invalidate his hypothesis by being in contradiction with it and facts which as yet have not been seen to be in harmony with it or to be capable of being explained by it. "If," he says, "it could be demonstrated that any complex organ existed which could not possibly have been formed by numerous successive slight modifications, my theory would absolutely break down" (*Origin of Species*, 6th ed., p. 146); and again: "If it could be proved that any part of the structure of any species had been formed for the exclusive good of another species it would annihilate my theory" (p. 162). On the other hand, he enumerates a number of facts, such as the instincts of animals like the bee and the ant, the electric organs of fish and the luminous organs, and the neuter gender of certain insects,—which still offer difficulty, and may require more knowledge than we at present possess for their full explanation.

The second respect in which doubt may attach to an hypothesis without affecting its essential truth is the extent of its application. The general tendency of the human mind is to exaggerate the extent to which a newly discovered principle is applicable to

reality. Subsequent progress consists in a more careful adjustment of the limits within which it holds true. The history of science and philosophy offers numberless illustrations. The rise of mathematical science, and the triumphs of its principles in the fields of number and space, led the Pythagoreans to apply them to explain the nature of reality in general. At a later date the physical method produced the atomic philosophy. In our own time, the discovery of the close connection between physiological and psychological processes has been made the ground of a theory which reduces thought to a secretion of the brain. Subsequent reflection has in each case sought to limit the application of these principles, but the limitations introduced have left the validity of the principles within their own field untouched.

So with conceptions which are recognised as more strictly hypothetical in their origin. The Darwinian theory again offers an illustration. There are two main respects in which attempts have been made to limit its application. From the side of Science grave question has arisen as to how far the principle of inheritance can be carried. Does it extend to traits of character which primarily owe their origin to habit as Darwin seems to have supposed? Or must we limit it with Weismann to organic variations? Whatever the conclusion of this controversy may be the validity of the Darwinian hypothesis as a whole is unaffected. Inherited variation is still a *vera causa* of divergence of species though its action may be showed to be crossed and complicated to a greater extent, or, again, to be simpler and more direct in its operation than was at first supposed. Secondly, from the side of philosophy, the claim put forward by professed Darwinians to have offered a satisfactory explanation of the intellectual and moral life has been questioned, and rightly questioned, by more recent thinkers, on grounds that do not concern us here. This limitation, however, again refers only to attempts to apply it beyond its legitimate sphere. While limiting in one respect, philosophy may be said to have confirmed it in another by showing that it possesses the best guarantee of truth in having made the origin of natural species only another illustration of the principle of evolution already recognised in the history of human civilisation, and thus brought the theory of it into line with conclusions already established in other fields.

SYMPOSIUM—IS THE KNOWLEDGE OF SPACE A PRIORI?

1.—By H. W. CARR.

PROFESSOR JAMES distinguishes three possible kinds of theory concerning Space :—"Either (1) there is no spatial *quality* of sensation at all, and Space is a mere symbol of succession; or (2) there is an *extensive quality given* immediately in certain particular sensations; or, finally (3), there is a *quality produced* out of the inward resources of the mind, to envelop sensations which, as given originally, are not spatial, but which, on being cast into the spatial form, become united and orderly." (*Principles of Psychology*, II, 272.) We may call these the Associationist, the Sensationalist, and the *A Priorist* theories respectively. I shall endeavour to set forth the main points of the *a priori* view in this paper, and to free it from some of the more obvious objections and misconceptions. Professor James has assailed it with all the force of his amusing satire, stigmatising it as a theory of "Psychic Stimulus," as "Mythologic," and as "A Kantian machine-shop theory." I am not going to deny that the ordinary interpretation of the theory, particularly Kant's own statement, does lay it open to this description, but I consider that it is chargeable entirely to a crude statement of it, not at all to its essential character.

One very general misconception is derived from the term *a priori* itself. The term *a priori*, like all language, depends on a metaphor; it is derived by analogy from time succession, but it does not imply time succession. To push the metaphor is to make nonsense of a theory by entirely missing its point. The "Mythology" charged against the theory seems to me to be entirely derived from this unfair use of a metaphor. "I have," says James, "no introspective experience of mentally producing or creating Space. My Space intuitions occur not in two times, but in one. There is not one moment of passive inextensive sensation succeeded by another of actively extensive perception." (*Psychology*, II, p. 275.) That priority in time could never have been intended by Kant is obvious, when we consider that time also is an *a priori* form of sense. Knowledge *a priori* is knowledge inferred from knowledge other than itself.

I must further guard my meaning from a more important misconception. By *a priori* elements is not meant ultimate, irreducible, self-consistent realities. Unless the term can be justified for what the President names a "transformational theory" I abandon it, for

I hold that reality is one. If the question, "How are synthetic judgments *a priori* possible?" is to be regarded as absolutely independent of the question, "How are synthetic judgments *a posteriori* possible?" then I must concur in the charge brought by the President in his address against the *a priorist* that, like the sensationalist, he is governed by the distinction of "within and without, self and the world, form and matter, intellect and data of sensation." (Presidential Address.) In all analysis, there is a temptation to neglect unity, and if, as I think we must admit, this is more especially chargeable against the Kantian criticism, it is only allowing not that the analysis is bad but that it is incomplete. If we regard the doctrine of things-in-themselves as an essential part of the *a priori* theory, to attempt to justify it from the point of view I have just indicated is impossible. But things-in-themselves do not seem to me an essential part of the theory. They arise from the notion that what is distinguishable is also separable, which seems to me wrong. Language is also misleading here, we speak of formal and material elements of experience, making use of a metaphor from physical science. We must not be misled by a term, it is not necessary to imagine an independent in-itself existence for form and matter, because we are able to distinguish them in a percept. Setting aside, then, as misconceptions the view that *a priori* and *a posteriori* represent a fundamental distinction in the absolute sense, and also the crude idea of a formal world existing apart from and prior to material data, let us consider the application of the terms to the theory of space.

The essential point in the *a priori* theory of Space is that Space is an unit. It is essentially one and not many, the perception of Space is not built up out of perceptions of spaces; spaces are always perceived as parts of Space. Knowledge of Space is knowledge of an infinitely continuous unit, the perception of an infinitely continuous unit cannot possibly be given in a sensation or produced from it by addition or abstraction. Professor James denies this contention of the unity of Space. "If any known thing bears on its front the *appearance* of piecemeal construction and abstraction, it is this very notion of the infinite unitary space of the world. It is a *notion*, if ever there was one, and no intuition. Most of us apprehend it in the barest symbolic abridgment: and if perchance we ever do try to make it more adequate, we just add one image of sensible extension to another until we are tired." (*Psychology*, II, p. 275.) Now, if anything might be settled by an appeal to experience, one might expect it would be this. Will anyone say that he can, or ever does, think of Space otherwise than as a continuous unit? When I say of a certain thing it is there, does 'there' refer merely to a quality of extensity in a

sensation? Does it not mean that the thing indicated has a definite place in respect of everything in what we call the outside world, that it is definitely fixed in the continuous unity we name Space? When I say that Atlantis does not exist, but that Australia does, am I only referring to a possibility of experiencing sensations of extensity, or with a quality of extensity, in the one case and not in the other? Do I not mean much more than this, viz., that the one is fixed in Space, the other is not in Space? If I can have a knowledge of spaces, which are not parts of Space until the relating activity has abstracted from their particularity, to what identity does my judgment refer? Again, do not the curious speculations of the fourth-dimensionists base themselves on the impossibility of getting away from the unitary continuum which is the space of experience? It will hardly be denied, I imagine, by anyone that to mature knowledge, Space is an unit; the *a priori* theory insists that this unity is of its essence. Is this unity then a notion or an intuition? Is it an original element of the perception, or something added to the original perception by the higher powers of the mind? "That the higher parts of the mind come in," says Professor James, "who can deny? They add and subtract, they compare and measure, they reproduce and abstract. They inweave the space-sensations with intellectual relations; but *these* relations are the same when they obtain between the elements of the space-system, as when they obtain between any of the other elements of which the world is made" (*ibid.*). Now, it is the essence of the *a priori* view that the perception of Space is original, and the sensationalist and associationist may fairly be challenged to say whether introspection reveals to them an experience of Space as manifold, whether they can even imagine a particularism of spaces or space-elements preceding the perception of Space in the same manner in which we are accustomed to imagine our ordinary sensations of sight, touch, taste, &c., as a manifold, with particular existence of their own, independent of the relating activity of consciousness. Apart from the truth or error of such a view of sensation, in the one case we can imagine it, in the other we cannot.

The question as to whether certain sensations have an extensive quality does not seem to throw light to me on the metaphysical question of the nature of Space. The *a priorist* need find no difficulty in granting Professor James' contention that there is an extensive quality given in certain sensations. The point of interest, of course, is to know the precise meaning of the word "sensation." If by sensation, is meant an element of experience, not itself consciousness, but one of the elements out of which consciousness is built up, what advance have we made on the psychological atomism of the associa-

tionists? If, on the other hand, by sensation, is meant the simplest and most elementary conscious state, but still a conscious state, then a sensation so conceived must present the whole problem of knowledge. This seems to me to apply particularly to James' description of the original space-sensation, for it is more than a sensation in the strict sense of the older psychologists, it is already a perception.

It seems to me an idle task to endeavour to find the origin of our perceptions of space and time. All our experience is indissolubly bound up in these forms of perception. If we conceive them as subjective forms of conception, there is no difficulty in inferring that the absolute is not bound by them. They are not reality, and reality is not limited by the spatial form. This is not a perception but an inference from the consideration of experience in its universal aspect. We cannot imagine it, we fail when we attempt to, and can only express such knowledge in the formula: it is so because it must be so, but how we do not know. Mr. Bradley, in *Appearance and Reality*, indulges in ingenious speculations, designed to throw doubt on the universality of the forms of space and time; but I find that in comprehending the meaning of them, I am simply relating them to the one time-series, and the one-space system that I know.

The question of the antinomy is also of great importance in the *a priori* theory. Space, the universal accompaniment of the perception of external reality, is itself obviously unreal, if by reality is meant self-consistency. That to which we refer everything, which we perceive as having independent existence, is inconsistent and contradictory itself. This inconsistency is explained by the *a priori* theory, which makes the reality of Space a subjective, not an objective reality. It denies that Space is reality in the sense of the ordinary understanding, and presents no difficulty to a transformational theory, that regards it as mere appearance, not as such qualifying the absolute.

The question as to whether Space may be a development is a question of origin, that does not directly affect the metaphysical question of the nature of our knowledge of Space. It may very well be that nature appears to us under a space form, because in the course of evolution all minds capable of perceiving it otherwise have been extirpated as unfit. Such a view of the origin of Space emphasises the subjective character of Space perception, and is no contradiction, but rather a confirmation of the *a priori* theory.

The many questions of great psychological interest that are closely connected with this subject I do not attempt to deal with, mainly because I am incompetent to do so and also that they do not appear to me to directly affect the question.

II.—By J. H. MUIRHEAD.

As I appear to be responsible for the subject of this Symposium, I may explain that it was suggested to me by the casual remark of a friend who was himself a Neo-Kantian, and an intelligent person to boot. The remark was to the effect that, in view of the advances in recent psychology, the Kantian doctrine of Space was no longer tenable. It came as a surprise to me, as it had never occurred to me that they had anything to do with that doctrine as now understood. But as it seemed to be possible for one even of the initiated to hold this view, I thought it might be worth while to re-state the Kantian doctrine in connection with the most recent results of psychology.

What is meant by Knowledge of Space? There are three senses in which we may understand the phrase:—

1. The presentation of extensity, which, so soon as it becomes an element in anything that can be called "experience," is the presentation of a world whose parts are outside one another.
2. Knowledge of the definite Space relations: position, magnitude, form, distance within that world.
3. Knowledge of Space "as a whole"—the abstract idea of Space as a form of unity in our experience.

As these upon any view must be regarded as stages in the development of complete spatial knowledge, the controversy on hand must clearly concern itself with the first.

What is meant by *a priori*? The doctrine that the knowledge of Space is *a priori* may be stated in two forms: (1) There is the older form, of which Schopenhauer's statement as quoted by Professor James (*Principles of Psychology*, II, p. 273), may be taken as a type. According to this, Space is an "innate, *a priori*, ante-experiential form," which somehow "lies already preformed in the intellect or brain," and within which we construct the physical universe. (2) It hardly needs to be explained that this is not the sense in which the Kantian doctrine is now held. There is no question of a fully developed ante-experiential form into which the mind fits an empirically given non-spatial matter. What is contended is that in our earliest experience of spatiality there is an element which is not given *in* the mere sensation (if we can speak of such a mere sensation at all) but is given *with* it. It is a matter of nomenclature whether we call this a "form," or an elementary act of judgment. The point is that it is there as the rudiment of our later spatial judgments. Before going on to oppose this doctrine to the most

recent statement of the Sensationalist position, I shall notice shortly the older attempt to assign an *a posteriori* origin to our knowledge of Space.

The older doctrine started from the assumption that spatiality is not immediately given in sense-experience. It must therefore be shown to be "evolved" or "chemically compounded" out of the immediate data of sense. The most distinguished representative of this view is, of course, Mr. Herbert Spencer. His view may be found in his *Principles of Psychology*, cc. XIII, XIV, XXII, and (re-stated in reply to criticism) in *Mind* of July, 1890.

The data from which the knowledge of co-existing positions, which is the kernel of our knowledge of spatial relations and of Space in general, is evolved, are these: (1) disparate, tactual, or visual sensations, as at the two corners of a book upon the table; (2) a series of reversible muscular sensations as the organ moves from one to the other; (3) the simultaneous (or what amounts to the simultaneous) presentation of the disparate sensations—as when our hands touch both corners of the book at once. The process by which out of these data the knowledge of co-existence is generated is the process by which the simultaneous presentation, being a "quasi-single state of consciousness," comes in time to be taken as the equivalent of the series of states, and to be habitually thought of in place of that which it symbolises.

Now if this is all that Sensationalism has to offer by way of explaining the origin of our knowledge of Space, it is not surprising that J. S. Mill, the candid friend of British Empiricism, should feel himself constrained to admit that "the idea of space is at bottom one of time." Mr. Spencer is not so easily daunted. He has scientific analogies at command to show how by a gradual transition we may pass from one form of reality to another which is qualitatively different from it. It is no more difficult to conceive of the idea of space emerging from the idea of a time series than to conceive of a circle becoming a straight line by gradually prolonging one of the axes, the molar motion of the stroke of a hammer passing as molecular motion into heat, or the same uniform dermal tissue transforming itself in the process of evolution into hair and nerve, tooth and eye.

We need hardly stop to discuss the relevance of these analogies. In order to prove by this method that the idea of Space can be built up out of successive muscular and tactual or visual sensations, Mr. Spencer would have to show that a circle can be built out of squares, gravitation out of simple motion, or the Lord Mayor's coach out of a pumpkin. The whole speculation of the empirical school in this country, if the truth must be told, has been unfortunate upon this

subject. Excluded from the easy solution of an *a priori* presentation, and failing to find spatiality among the simple data of sense-experience, the consistent sensationalist had only one course left to attempt to construct it out of the isolated successive sensations of touch, vision, and the muscular system. The whole proceeding reminds one of nothing so much as of the brothers in *The Tale of a Tub*, who set about evolving permission to wear the much-coveted shoulder knots from their father's will. It was true that it could not be obtained *totidem verbis* nor yet after the most ingenious attempts *totidem syllabis*, but there was nothing to prevent the words being evolved in a third way. Accordingly, one of them who had more book-learning than the others "took heart and said: 'Brothers, there are yet hopes, for though we cannot find them *totidem verbis* nor *totidem syllabis*, I dare engage we shall make them out *tertio modo* or *totidem litteris*.' This discovery was also highly commended, upon which they fell once more to the scrutiny, and picked out S, H, O, U, L, D, E, R; when the same planet, enemy to their repose, had wonderfully contrived that a K was not to be found. Here was a weighty difficulty, but the distinguished brother, now his hand was in, proved, by a very good argument, that K was a modern illegitimate letter, unknown to the learned ages, nor anywhere to be found in ancient manuscripts. . . . Upon this all further difficulty vanished, shoulder knots were made clearly out to be *jure paterno*, and our three gentlemen swaggered with as large and flaunting ones as the best."—(*A Tale of a Tub*, xi, sec. 2, 79.)

Mr. Spencer has made a like gallant attempt to read our knowledge of Space into sense-experience by way of successive presentations. The misfortune is that by no ingenuity can these be made to *spell* the spatiality of which we are in search. What lends colour to his deduction of co-existence of positions from simultaneous or quasi-simultaneous sensations of touch and vision is that without warning he interprets the latter as though they already were sensations of position. "The primitive element," he tells us, "out of which our ideas of visible extension are evolved is a cognition of the relative positions of two states of consciousness (*sic*) in some series of such states consequent upon a subjective motion." But seeing that position implies Space, what is this but to assume, as already given, what you profess to exhibit as a result?

The results of recent psychological analysis have given new hope to Sensationalists and a new turn to the discussion. These results may be epitomised under the following heads: (1) Besides the particular *quale* of the presentation itself the sensations of hearing, touch, sight, give with equal directness an element of "voluminousness" involving in germ the knowledge of three-dimension space;

(2) different points on the same sensitive surface give qualitatively different sensations—attention has been called to these differences by recent psychologists under the name of “local signs”; (3) attention has further been called to the existence of special end-organs sensitive to motion which seem to give us immediate knowledge of extensity, apart from the tactual impression of the positions between which the motion takes place (James, ii, 171); (4) the analysis of the “muscular sensations” of the older psychology has been revolutionised by (a) the denial of the existence of anything corresponding to the sense of innervation; (b) the distinction within muscular sensations proper of those which are due to the excitation of the sensitive surfaces of the joints and those which are due to the feelings of muscular contraction. This last distinction was not likely to escape Professor James, giving as it does an opening for the paradox which he is not slow to state, that instead of being the chief source of our knowledge of Space the sensations of our contracting muscles, “probably play as small a part in building up our exact knowledge of Space as any class of sensations which we possess” (*op. cit.*, p. 197).

Recent Sensationalism, of which Professor James is the prophet, has attempted to establish on the basis thus laid down the doctrine: (1) that a perception not merely of extension but of Space in three dimensions is given immediately in the primitive sensation; (2) that the particular Space relations of direction, position, distance, magnitude are facts of the same order as the original data (“they are nothing but sensations of particular lines, particular angles, particular forms of transition, or—in the case of a distinct more—of particular outstanding portions of Space after two figures have been superposed”)—in developing them no mysterious power of synthesis is required: discrimination, association, addition, multiplication, and division are sufficient; (3) that the conception of a larger Space which includes the given intuited spaces, is obtained by a process of summation and abstraction—by the former we “straighten out” the chaotic presentations of the particular sense (adding to ABC DEF as outside and continuous with it); by the latter we drop out the several natures of the various fields and think only of their extents.

The question with which we started is: What value is to be attached to the Neo-Sensationalist position, thus barely sketched, as a reply to the Neo-Kantian doctrine of the *a priori* element implied in our knowledge of Space?

In attempting the briefest possible reply, I am tempted, in the first place, to ask whether in much that he lays down as to the original data of sense, Professor James has not himself been guilty

in some degree of the Psychologists' Fallacy against which he carries on elsewhere so unrelenting a warfare. I find, at any rate, no attempt to distinguish, in those sensations which are said to carry "voluminousness" along with them, between the element which may be supposed to be primitive and the element which we supply from long experience in interpretation of it. Thus, we are told that loud sounds have a certain enormousness of feeling; glowing bodies give us a perception which seems roomy; the tympanic membrane gives a sensation which is "distinctly and unmistakably one of vague spatial vastness in three dimensions." Granted that this is all true, how much of this enormousness, roominess, and vastness is due to the primitive datum? how much to association and analogical interpretation? If it is maintained that the sensation in its original form gives us "distinct and unmistakable" ideas of spatial relations in three dimensions, why, we may ask, should it not give us more information still? There is the colour which we call "high" because it gives us an idea not only of two dimensions but of the relation between them; a cough which we call "hollow," because it gives us not only the idea of three dimensions, but of a vacuity contained by them; and a sigh which we call "deep" because of the further information that the vacuum is prolonged. Neo-Kantists are accused by Professor James of cherishing the doctrine of innate ideas, but compared with the mental apparatus for the interpretation of the physiological stimulus with which Neo-Sensationalism equips the primitive brain, the forms with which even the crudest form of the *a priori* doctrine endows us are the palest of abstractions.

I do not, however, mean to deny that extensity is given with the earliest recognisable sensations. On the contrary, I hold that it would be impossible to give any intelligible account of the development of knowledge at all unless the later is already implicitly given in the earlier. What the Neo-Kantist is interested in maintaining is that, granting the facts to be as alleged by recent psychologists, no one of them, nor all put together, can make it one whit the easier to prove that Space is given *a posteriori* in the sense that the knowledge of it is merely sensational. For—

1. At the lowest point at which we can take the presentation, thought has already begun its work. The element of thought and the element of sense are given together. It is, of course, a mistake to represent the relating activity of thought as something induced upon the given material, as Professor James accuses the Platonisers of doing, but it is equally a mistake to make the relation of externality of parts even at its lowest (and apart from such externality it is difficult to see what extensity could mean) a mere sensation. Professor James himself admits that the sensation comes

"in the shape of a simple total vastness." But, surely, even the vaguest total is a total of parts, however vaguely they are in turn conceived. And such a relation of whole to parts is not a sensation, but the product of a thought which can hold differences apart and relate them to one another on the ground of an underlying identity. Go as low as you will, a totality or unity of vastness implies a plurality, nor can one form of the relation be given without calling into existence the other; one cannot be reduced to zero without annihilating its correlative. When, therefore, either is given (as upon the theory before us one at least is given) there must be taken with it something else which is not merely another given, but has its place beside it, or rather in it, by virtue of the nature of mind itself as a relating activity and not by virtue of a further exercise of its receptive powers.

Professor James seeks to identify his doctrine in the chapter we have under review with Dr. Ward's, as developed in his article on *Psychology* in the *Encyclopædia Britannica*, but Dr. Ward's has this merit in comparison with Professor James's, that it clearly recognises the relation of whole and part as implicitly given in the elementary presentation of extensity. "Extensity," he says, "does imply plurality—we might call it latent or merged plurality, or a 'ground' of plurality, inasmuch as to say that a single presentation has massiveness is to say that a portion of the presentation continuum at the moment undifferentiated is capable of differentiation." (*Art*, p. 75.)

But this is not all: this totality, so far as it is a totality, is so in virtue of its being contained in a larger whole, and what has just been said of the element of diversity within the given continuum holds of the wider unity within which it is itself an element of difference. And this is equivalent to saying that not only the differences of position, direction, &c., but the universal conception of Space itself, is given implicitly along with the presentation-continuum—in however elementary a form we conceive of it to exist.

2. These conclusions are still more obvious when we come to distinct Space relations, and need only be re-stated. It is here indifferent to Idealism how psychologists settle among themselves the vexed questions of the precise data out of which our knowledge of extension is built up, or of the inferential origin of the knowledge of the third dimension. What is essential to the position that it here takes up is to prove (i) that these relations are only intelligible as elements within a whole whose determinations they are, and (ii) that this relation of elements within a system by which they are determined, and which they determine in turn, is one that

can subsist only for a consciousness which is not merely receptive of what is given, but by virtue of its constitution seeks, even at the level of external perception, such systematic unity as is possible at this stage. The world of spatially-related objects is an ideal structure, reared and maintained at each moment by the activity of thought itself.

Professor James is quite conscious of the part that thought plays in sustaining around us a world of articulated space relations. Witness the passage (*loc. cit.*, p. 146) ending with the words: "Obviously, for the orderly arrangement of a multitude of sense-spaces in consciousness, something more than their mere separate existence is required." It is only his Sensationalist assumptions (or shall we say prejudices?) that prevent him from recognising in this "something more" the differentiating and unifying function of thought itself and lead him, in what is perhaps the most unsatisfactory section of the whole book, to attempt to show how our idea of Space as a whole is built up by the mere addition and summation of a multitude of separate "sense-spaces."

3. This brings us to the last point: the Sensationalist account of the idea of Space in general. After what has been already said a word is here sufficient. Mr. Spencer seems to regard it as a generalisation from particular experiences got by way of abstraction in the orthodox manner. Professor James supposes it to be obtained by a process of smoothing out and filling in empirically given sense-spaces. If what has been already said be true it is clear that neither account is satisfactory. Unless the general conception of homogeneous extension is already latent in the first apprehension of an extended surface, no process of abstraction from given parts, still less of piecemeal addition of them, can give it to us. To suppose that either of them can is only to repeat the old "soulless blunder" of confusing the abstract or inert universal created by a process which is either merely analytic or merely synthetic, for some arbitrarily-chosen end, and which adds nothing to our knowledge of the concrete universal which is a necessary element in the knowledge of the particular, in however primitive a form we conceive of that knowledge as existing, and grows into distinctness as the particulars themselves become distinct.

In the above view I find myself in substantial agreement with Mr. Carr's paper. In some of the details of his criticism I am not sure that I am able to follow him. I understand, for instance, what is meant by maintaining that etymologically *a priori* knowledge ought to mean knowledge inferred from knowledge other than itself, but I am not sure what he means when he says that this is the true meaning of the phrase, nor in what sense he means us

to understand that the knowledge of Space is so inferred. He says, indeed, on p. 122, that "this," *i.e.*, I presume spatial form, "is not a perception but an inference from the consideration of experience in its *universal* aspect." But this would require explanation. For his previous account of the origin of our knowledge of Space seems intended to prove that the conception of Space in general is implied in the *particular* experiences of this or that spatially-extended object—and this I take it is the true view. Again, I am not sure to what extent his distinction between subjective and objective is a legitimate one. After rejecting Kant's theory of a thing-in-itself (p. 120) it does not seem consistent to maintain the "subjective" character of Space except in the sense that all forms of unity short of the Absolute itself are provisional. But in this sense all human experience is subjective, and the term ceases to be descriptive of one element in it as opposed to another.

III.—By G. F. STOUT.

It appears from the papers of my predecessors that the specific topic of this Symposium is the bearing of recent psychological explanations of the genesis of our perception of Space on the Kantian doctrine that Space is an *a priori* constituent of knowledge. It appears also that the Kantian doctrine is not to be taken precisely as it stands in Kant, but as sifted and clarified by modern criticism. The first question with which I am confronted is, therefore, this: What is it in the Kantian doctrine which has essential and abiding value? I presume that the following statement will not be seriously disputed. The apprehension of Space is logically involved in all our cognition of external objects. It cannot therefore by any logically valid process be derived from particular external experiences. More especially, it cannot be logically educed by any process of empirical generalisation from our knowledge of particular spatial relations; nor can it be legitimately regarded as a kind of aggregate or patchwork pieced together by combining or consolidating such particular cognitions. The essence of the Kantian argument is that all knowledge of particular spatial relations, as such, already includes the reference to a Space which comprehends all particular spaces. I refrain here from either criticising or defending this view; like Mr. Carr and Mr. Muirhead, I accept it as a substantial and permanent contribution to the theory of knowledge. Turning now to consider its relation to psychological doctrines and problems, we seem to be confronted with a difficulty. Modern psychology, for the

most part, aims at explaining the genesis of the space-perception ; but if that perception is an indispensable condition of the possibility of experience, it would seem that it can have no genesis except in conditions which are temporally prior to experience : in other words, it can only have a genesis which lies outside the sphere of psychology. This difficulty may be dealt with in two ways, (1) by limiting the claims of the psychologist ; (2) by limiting the range of the Kantian doctrine. The psychologist may say that he does not assume the existence of any period in our mental life during which the space-perception was absent, and from which it ultimately emerged by a gradual process. He may confine his pretensions to an explanation of the conditions under which the space-perception has been and is generated throughout the whole duration of our experience, and of the gradual steps by which it becomes more explicit and definite. This appears to be Mr. Muirhead's view of the psychological problem. On the other hand, it is open to the psychologist to subject the Kantian doctrine to a more rigid scrutiny in order to wrest a concession from it. Kant says that Space is a condition of the possibility of experience : but we may legitimately ask, of what experience ? Now, from Kant's own argument, it would seem that the experience meant is that which involves cognition of particular spatial relations. But why are we to deny the possibility of a more rudimentary experience, in which particular space-relations were not cognised, as such ? Obviously it would be rash to exclude this possibility without careful consideration ; certainly the Kantian argument, as it stands, does not justify us in so doing. Nor, so far as I can see, does Mr. Muirhead's statement of the Kantian case cut away the ground from under the psychologist at this point. What Mr. Muirhead insists on is the absurdity of accounting for the origin of the space-perception as a product of the quasi-mechanical combination of sensations and sensuous images. He demands that due account shall be taken of the synthetic and analytic processes of thought, but is it clear that the thought-process could have no existence before the birth of the space-perception ? If Mr. Muirhead thinks so, he ought to have argued the point at length. He does indeed appear to urge that experience of extensity could have no existence except as a rudimentary perception of Space. But his contention here appears to run in a circle, for it derives its whole force from the assumption that the experience of extensity involves the distinction of positions within a whole or series, which is the very point at issue. Why should not extensity exist as merely felt, or, to use Bradley's expression, merely experienced, before it becomes informed by discriminating and relating thought ? We certainly can have much sense-material which is not, so to speak, utilised by

thought; e.g., we can experience a variety of colour-differences which we do not distinguish. Why should this not be initially true about extensity in general?

In Mr. Carr's paper the point chiefly urged is the unity of Space. "Knowledge of Space is knowledge of an infinitely continuous unit." Now I do not know exactly what Mr. Carr wishes to imply when he says that Space is a "unit." He is, of course, right in what he means to deny—he means to deny that any particular spatial relation has any meaning by itself apart from reference to space beyond itself with which it is continuous. He means also to deny that Space can be legitimately considered as a generalisation in the sense in which a class concept is a generalisation. Space, as Kant says, contains particular spaces *in* it as its parts, not *under* it, as cases or examples of it. So far, I can follow Mr. Carr. But he may, and probably does, mean more than this. When we speak of a unit, we usually mean something that is complete in itself, and not a fraction of something else. Now, can it be said that Space is self-complete? Can it be properly called a whole, in any but a relative and comparative sense? It would seem that to affirm this, is to contradict the very nature of Space. If Space is self-complete, then Space must have a spatial limit. But a spatial limit is a limit in Space—a boundary line separating and uniting parts of Space. Hence only parts of Space can have spatial limits, not Space itself, taken absolutely. Therefore Space cannot be a unit in the sense of being self-contained. Mathematicians have, indeed, attempted to think of Space as a completed whole; this view leads them to their doctrine of the circular points of infinity. They tell us that if a straight line is produced to infinity in both directions, then in infinity its end points will meet. Does Mr. Carr welcome this doctrine? If he does, I can only regard his case as being equally hopeless with that of that most naïve and innocent of metaphysicians, the transcendental geometer. Certainly, I admit that an endless series can never be ultimate reality; but the conclusion I draw from this is that Space is *not* ultimately real, but that it is, as Mr. Bradley would say, an Appearance.

Mr. Carr's doctrine of the unity of Space suggests another problem. It is clear that in his view there is, and can be only a single Space, not a plurality of spatially disconnected spaces. My mind is not so fully made up on this point as his appears to be. It is true that there is only a single continuous Space, in which physical things and their physical relations are placed. There is only one Space whose distances are determinable by physical measurement. There is only one Space which physical science takes account of. But this one single Space presents itself to us in various ways. For

us, as percipient beings, there is a visual Space and a tactual Space. In my visual Space, considered merely as sensible appearance, and apart from those interpretations which have become integral constituents of all our perceptions, visual appearances differ in magnitude with their distance. A person coming into the room and walking towards me becomes many times larger before he actually reaches me. The child beginning to draw, attempts to reproduce the actual relations of lines and surfaces, rather than their visual appearance; his whole progress in drawing consists in learning that this is a mistake. What we call the actual shape of a body is something different from any of the separate views we have of it under dissimilar perspectives. It is that spatial construction which accounts for the dissimilar perspectives, and for their relation to each other. But each of the separate views is a spatial experience. Can it be properly said to form part of physical Space? We may rest the whole question on a single definite issue. Looking down from a tower I see a man apparently only a few inches high. He by actual measurement is six feet high. His six-foot of length is undoubtedly part of physical Space; but where do the five inches of his apparent magnitude belong? The five inches is certainly something spatial; but this is not all. Suppose that I stand close beside the man, we may then say that he looks the length he is. But does this mean that our apprehension of the magnitude which belongs to his visual appearance is identical with our idea of his real magnitude? Even in this case, the truth seems to be that visual extension is merely a sign which we have learnt to interpret. Physical extension, like physical time, is something which cannot be identified with the content of any sense-experience, at any one moment. The only Space to which Mr. Carr refers is neither visual nor tactile; and yet visual and tactile experiences truly have a spatial quality.

DOES LAW IN NATURE PRE-SUPPOSE PREVISION?

I.—By ARTHUR BOUTWOOD.

My own contribution to this evening's Symposium is a short essay in definition. The question before us is really one concerning Final Causes, and, perhaps, the readiest way to approach it will be to raise the general question, "What is a Final Cause?" "What character must we assign to anything we regard as a Final Cause?" The question is not, "Do Final Causes exist?" but, "How must we think of them?" more particularly, "Do they pre-suppose Prevision?"

We are familiar enough with the definition of a cause as that by which something is done, and with the historical classification of causes as either material, efficient, formal, or final. Now, the definition I have just given is a generic definition of cause, and, consequently, it is true not only of efficient causes, but, also, in some radical sense, of all causes. Whatever else, therefore, a Final Cause may be shown to be, this is manifest at the outset: it is a true cause, a cause of a particular character, it is true, but, still, a cause. It, therefore, follows that no definition of it can be adequate which does not permit us to regard it as doing something, or achieving something, in other words, as being causally efficient.

Efficiency, power to achieve something, to bring something to pass, being thus the character which Final Causes possess in common with all other causes, let us ask what is their note of differentiation.

The names we use for the several kinds of causes come to us by literal translation direct from the vocabulary of the Schoolmen, and in this, as in so many other matters, the masters of mediæval thought were but middlemen between the moderns and Aristotle. The Scholastic adjectives, however, do not carry us back to Greek adjectives, but to Greek nouns. Therefore, we do not find Aristotle speaking in so many words of the Final Cause; neither, for that matter, do we find "formal cause" or "material cause" in his vocabulary, but just as he speaks of the form and matter of a body as being, in some sense, causes of it, so also, he speaks of the end. "Another sort of cause," he says, "another sort of cause is the end, that is to say, that on account of which ($\tauὸ οὗ ἐνεκα$) the action is done" (*Phys.*, *lib.* II, c. 3).

This brings us face to face with the real difficulty. "The end," "that on account of which the action is done,"—terms and phrases like these point us to the future, that is, to the non-existent, to something which certainly may come into being as the result of a particular series of events, or line of conduct, but which, equally certainly, does not yet exist, and which, perhaps, never will exist; for although we perform a given action for the sake of achieving or attaining something which is contingent upon it, it by no means follows that we succeed. On the contrary, the commonest proverbial philosophy, the commonest of common sense, warns us how many are the possibilities of mischance that beset even our simplest acts, even the raising of a cup to expectant lips; while Burns, in his inimitable Doric, has told us in words less perishable than brass, how often an untoward fate frustrates even

"The best laid schemes of mice and men."

In what sense, then, can this end, this something on account of

which some antecedent action is performed,—in what sense can this be a cause? A cause must do something, must set up a change in a series of events, or start a new series. Now, if it acts, it must assuredly exist, but the end, which we are told, is another sort of cause, so long as it is unattained, certainly does not exist, and when it is attained, the series of events leading up to it is closed so that there is no longer need nor room for its causal efficiency.

Let us turn once more to Aristotle. After telling us, in words I have already quoted, that “another sort of cause is the end, that is to say, that on account of which the action is done,” he continues, “for example, in this sense, health is the cause of walking exercise.” The case in his mind is evidently that of a man who walks for the benefit of his health. Now, why does such a one turn pedestrian? “We say,” replies Aristotle, “we say it is in order to have good health; and in speaking thus we mean to name the cause” (*Phys.*, *lib.* II, c. 3). Health—the end—is, therefore, in some sense which we have to ascertain, the cause of the exercise being taken. But it is taken in order to obtain health, therefore, when Aristotle’s pedestrian commences his walking, he has not health, for health is represented to be the result of his walking, and if he already had it, he would not walk to get it. Nevertheless, “health is the cause of walking exercise,”—these are Aristotle’s very words. Therefore it would seem that something that does not exist can act as a cause.

So far as we have seen, cause and effect seem at opposite poles both of thought and of fact,—how can they be combined into the one conception of a Final Cause? in the conception of the end which is also cause? Let us turn to Aristotle’s pedestrian again. Why does he take exercise? “We say,” answers Aristotle, “we say it is in order to have good health, and in speaking thus we mean to name the cause.” I ask you to note particularly the exact phrase, “We say it is in order to have good health.” We are no longer dealing with abstract quantities and relations, but with the living, concrete facts of human purpose and volition. In a series of physical events, end and cause are at opposite termini of fact—separate, certainly, in time, perhaps also in space, and despite our best efforts, they cling with baffling pertinacity to opposite termini of thought. When, however, we turn to the same relations as illustrated in the self-conscious and purposeful effort of man, the conditions of the problem are vitally changed, and I would submit to you that we find in that very self-consciousness and purpose a clue to the solution we are seeking.

A man who is ill, walks to attain health. This implies that he desires health, and desire, of course, implies some foresight of a possible end. He posits health as a state which it is possible for him

to attain; he desires it, desire stirs impulse and volition, and volition issues in purposed action to attain the end present to thought.

Listen to Aristotle once again. Why does his pedestrian walk? "We say it is in order to have good health; and in speaking thus we mean to name the cause."

According to the Master himself—"the Master of those who know"—this is an illustrative, and, perhaps, a typical case of Final Causes. Now, what has it yielded to our analysis? This very significant result, that the end can be considered as a cause because, before it exists as a fact, the conception of it as possible has been present to a foreseeing intelligence, and has marked out the path of purposed action which has issued in attainment, and which has thus brought the end into actual existence.

This, I submit, warrants us in answering the question which forms the subject of our Symposium this evening in the unqualified affirmative.

II.—By C. C. J. WEBB.

I am so thoroughly in accord with Mr. Boutwood's paper, that nothing is left me but to state more explicitly than he has stated it the conclusion to which his reasonings seem to point. I do not at all know how far he will agree with it as I shall put it.

I cannot understand what is meant in the last resort by law, or tendency, or system, or order of Nature, or any such phrase, apart from a designing and purposive Mind. The world in which we discover these laws, these tendencies, this order, this system, is a world in time: but at any point of time, the present alone is really existent; the future, the existence of which these expressions seem to imply, is really existent only so far as present; and it can be present only as a design or conception in a Mind. No doubt it may be said that Time is full of contradictions, and can claim to be no more than Appearance: this I should be ready to allow, but I should still say that, so far as the notion of temporal succession is valid, so far, too, is that of design or purpose. The Absolute Mind, I admit, is inadequately characterised by these impure categories of design and purpose, with their admixture of the temporal and quantitatively infinite element; but so far as the Absolute is presented to us under the form of time, so far is the rationality of the world appropriately regarded as a divine purpose or design. Where and when we can rightly speak of a Law of Nature, in the ordinary sense, then and there we can speak rightly also of Prevision, and Purpose, and Design. "My thoughts are not your thoughts, neither are your

ways my ways, saith the Lord. For as the heavens are higher than the earth, so are my ways higher than your ways, and my thoughts than your thoughts." (Isaiah lv, 8, 9). The dissatisfaction of our own minds with the form of time, being a sort of transcendence thereof, justifies us in the thought that the divine Mind may be exempt from this form, and that thus the words *prevision* and *design* may be inadequate to describe its activity; but if we are to think that, therefore, prevision and design are not to be ascribed to God, relatively to the world-process in time, we do but fall into the barren and superstitious agnosticism which prostrates itself before its Unknowable fetish, which is Pure Being because Pure Nothing.

We do not come to close quarters, however, with the objection felt by many to the answer which Mr. Boutwood and I have given to the question we are here to-night to discuss, unless we note that, while to those who worship a personal God it is natural to speak of prevision, of purpose, of design, however ready they may be to express the inadequacy of these expressions as applied to him, it is otherwise with those to whom the "personality of God" is a phrase, false, meaningless, or at the best, only capable of such a meaning as even Mr. Bradley allows it to bear in his *Appearance and Reality*, pp. 531-3, in spite of his conviction that those who "insist on what they call the personality of God are intellectually dishonest," and of that contented temper which finds it "sufficient to know that the Absolute is not a finite person." The underlying question in this, as in so many other discussions, is just this question of the personality of God, which our metaphysicians nowadays treat so cavalierly. The phrase of Mr. Bradley (and the like is often heard in this Society and elsewhere) that "a person is finite or meaningless" does not convince me that the belief which is to some of us "the heart and rule of life" (Swinburne, *Erechtheus*, 1743) is an illusion which cannot maintain itself at a high level of speculative culture. I am not concerned to insist on ascribing quantitative infinity to God: He, the Source of all order, all reason, all beauty, is least of all himself *ἄπειρον*; but I would, on the other hand, deny that personality is essentially finite in any other sense than is satisfied by self-limitation. Our human personality is doubtless finite, in that it is limited otherwise than by itself: but the thought of an infinite personality is not, therefore, a vain abstraction or composition, like the imagining of a centaur or chimera. For human personality itself is dissatisfied with its finitude. It is not complete in itself, it continually shows that it feels and knows itself to be incomplete. Love, patriotism, religious devotion, are all the products of the human personality for the transcending of its limits. But none of these satisfy the passion. The beloved person is not perfect, and, in

union with the object of love, the "mortal bars" against which the human spirit beats, are still there. There are worlds, the distance of which from the self remains unaffected. If in love, however, the beloved is not universal enough, in patriotism or still more in the cosmopolitan enthusiasm of humanity, the object of the passion lacks full personality. Lastly, religious devotion itself may be, and usually must be, directed to one or another aspect of the Deity, and so may be felt to be unsatisfactory, and seen to be narrow. Thus the ideal of personality is a personality in which the exclusiveness, the finitude, shall be done away; not in an indiscriminating unity of subject with object below the level of self-consciousness, but in such a "taking up" of the duality into the unity as should still retain it as a moment within the unity; just as love, the nearest image thereof, could no more dispense with the distinctness of those that love than with their unity; two are one, but the unity is mediated by the duality. This ideal of Personality is what the Christian religion attributes to the Supreme Being: in the unity of his essence a trinity of persons; in the creation of the world, a Maker of other persons, whose distinctness from himself is no alien limitation of his personality, because it is the act of his own free will, the expression (according to the thought borrowed by Athanasius, and many other Christian theologians, from Plato) of his unenvious love that grudged existence to nothing. (See Plato, *Tim.* 29, E.; Athanasius, *De Incarnatione*, iii, § 3; Augustine, *De Civitate Dei*, xi, 21, Cp.; Joannes Scotus Erigena, *De Divisione Naturæ*, iii, 2.)

Mr. Bradley would prefer to call the Absolute "superpersonal." I profoundly suspect this word: in Mr. Herbert Spencer it goes with a philosophy which has perhaps never seriously tried to think the Ultimate Reality under the "highest category" available to us; in Mr. Bradley it reminds me rather of an older writer, of the monophysite mystic who called himself Dionysius the Areopagite, and exercised a far-reaching and unfortunate influence over Christian theology. He is ever making play with *ὑπέρ*-this, and *ὑπέρ*-that: and what does it all come to? To a distrust of human thought, a practical denial of the essential likeness of the human to the divine—that doctrine of the Image, which is the speculative principle alike of Christianity and idealistic philosophy. The example of the false Areopagite shows that Platonism could fall to this: may not a more modern idealism do the same?

III.—*By* E. C. BENECKE.

When I was asked, quite recently, and with the papers we have just heard before me, to write the third paper for this evening's Symposium, I did not undertake to do so without considerable hesitation; for, though agreeing with much—perhaps I should even say with the greater part—of what is said by my predecessors, I nevertheless find myself obliged, as regards the answer to be given to the question before us, to come to a directly opposite conclusion. By this I do not mean that I draw an opposite conclusion from the same premisses, but that, though the question does not appear to me to be very clearly put, I cannot understand or discuss it in the sense in which both Mr. Boutwood and Mr. Webb appear to have taken it, and am, therefore, compelled, if I argue it at all, to do so, not by directly meeting or referring to their arguments, but on entirely different grounds. If I rightly understand them, those arguments appear to be directed to the question whether we, who may be supposed to believe in "Law in Nature," ought also, as a matter of fact, to believe in "Prevision" and Design on the part of the Author of the universe. Now, this is a wider question than, as it appears to me, we properly have before us or than I should care to discuss. Quite apart from revelation, reference to which I take to be excluded from our discussions as a matter of course, we may have—certainly I am far from wishing to express a doubt of this—excellent reasons for believing that the universe is the work of a Creator, who fully foresaw the results of his action and directed it specially towards them as ends: but in so far as these reasons are practical or religious—and I believe them to be mainly, if not exclusively, such—I propose to leave them, and the consequences that follow from them, wholly out of consideration in my discussion of the question of this evening. I need hardly say that I thus exclude them, not at all as having no weight, but as being properly the subject of a different kind of inquiry, and as belonging, moreover, to a class of considerations with which I do not feel competent to deal.

The question, I have said, does not appear to me to be very clearly put and, I think, requires to be more closely defined.

I confess that I do not like and do not quite understand the word "pre-suppose." In whose mind is the pre-supposition supposed to exist? There can surely be no doubt that many who believe in Law in Nature, rightly or wrongly also believe themselves justified in rejecting the assumption of Prevision in the sense in which, I take it, that term is to be understood in the present discussion: and if so we must certainly admit that if the question means "Is it impossible for

the one belief to be entertained without the other?" that question must be answered in the negative.

But this, I take it, is not the meaning of the question. I understand it to mean rather "Does the belief in Law in Nature *logically involve* the assumption of Prevision?" "If we believe in the former, are we bound, in consistency and by logic, also to assume the latter?" or, which amounts to the same thing, "Is the man who cannot see his way to admitting the assumption of Prevision, logically bound to reject that of Law in Nature also?" This, as I understand it, is the meaning of the question, and I shall consider it on that supposition.

Even so, however, the question does not appear to me to be sufficiently precise. Before we can attempt to answer it we must know what we are to understand by Law in Nature, and what is the kind of Prevision meant:—Prevision by whom? and as to what?

I will take the latter question first.

In a well-known passage in his *Essai Philosophique sur les Probabilités* Laplace supposes an intelligence endowed with a complete knowledge both of the state of the universe at any one moment of time and of the whole of the laws and forces of nature, and with an infinite power of mathematical and logical analysis. Such an intelligence, he says, "would include in the same formula the motions of the largest bodies in the universe and those of its lightest atom. For it nothing would be uncertain, and the future as well as the past would lie open before its eyes."* In fact it is obvious that on the assumption of such a complete regularity as is supposed by Laplace, or indeed on that of any conception of "Law in Nature" which would satisfy a modern man of science, there must be, not only such a hypothetical possibility of prevision as supposed, but, as Laplace also observes, even the possibility of a more or less imperfect prevision by man, such prevision growing less imperfect in proportion as he approaches, at whatever distance, to the condition of the perfect "intelligence" supposed. Indeed, knowledge of facts and of laws means, *pro tanto*, power to foresee; and if this is what is meant we shall have to answer our question in the affirmative.

But I take it that this is *not* what is meant. I understand the word Prevision in our question to mean "Prevision of the course of nature by the Author of the universe." If so—and the papers of my predecessors show that they also so understand it—our question will be: "Does belief in Law in Nature necessarily involve the assumption that nature is the work of a Creator, and that he foresaw its course?"

* *Essai Phil. s. l. Prob.*, pp. 3-4 (edition of 1840).

Closely connected with this last assumption is this other: that the Creator not only foresaw this particular course of nature but desired it, and that his action was directed to the production of this as an end. That this is bound up with the belief in Law in Nature (or, rather, with our practical belief in final causes) is, if I rightly understand him, the point which Mr. Boutwood wishes in his paper to prove.

And what, lastly, are we to understand by Law in Nature? This may, of course, be understood—as the term Law of Causation has been understood—in various senses, but I do not think that we need closely define it here. I presume that what is meant by it in our question is such *regularity in nature* as science cannot get on without; and in this sense I shall take it. How, precisely, we interpret this regularity—whether in the sense in which, as in the hands of Lewes, the assertion of it becomes almost an identical proposition, or, in the looser and more popular sense implied in what Mr. Venn calls the Brown-Herschel-Mill view,* whether we take it to apply strictly to all phenomena or make an exception in favour of the freedom of the will, and so forth—is immaterial to the present question and need not be here determined.

Now, understanding the question in the sense to which we have thus been led, are we justified in demanding that the man who is unable to admit the assumption of the kind of prevision supposed, should at once give up his belief in the regularity of nature?

Primâ facie it would not appear that we have any right to do so, nor can I see any reason why a man who is unable to believe that the course of nature has been foreseen by any mind, finite or infinite, should be on that account precluded from believing that that course follows strictly-determined laws.

It may, of course, be objected that such a man's account of nature will necessarily leave much not only unexplained, but without any immediate prospect of explanation; and certainly he would be a bold man who should say either that he could or that he expected shortly to be able to explain the whole of the phenomena of nature by reference solely to their efficient causes. But does this justify us in insisting that he shall either abandon all attempt to approach the goal of science, and with it his belief in the regularity of nature, or adopt what, for shortness, I will call the Prevision theory, or, lastly, give up all claim to be considered a consistent thinker? Surely it would do so only if the theory he was required to substitute for his own were so free from all difficulties as to be safe from having any similar charge brought against itself.

* Venn, *Empirical Logic*, pp. 58, *sqq.*

Is the Prevision theory in this position?

To ask this question is to answer it. The most ardent teleologist will hardly suggest that he is ready with a complete explanation of nature, while for the thinker and the man of science—and it must be remembered that it is *quâ* thinker and man of science only that I am here speaking of him, not *quâ* man with religious convictions or aspirations—the teleological and Prevision view is surely not without difficulties of its own.

If it had been *proved* that the Prevision theory is the only theory on which there are hopes of arriving at a consistent view of nature, while apart from its assumptions this is impossible, it would be a different matter. We might then fairly expect that the investigator should adopt the only hopeful course or should drop his investigation. This, however, has not been proved, and is precisely the question. It may be very true that the consideration of, for example, the marvellous manner in which many of the organs of animals and plants perform their functions seems almost to force teleological views upon us—that, for example, it is extremely difficult to consider the eye or the ear without supposing that they must have been intended for seeing and hearing, or to imagine that it will ever be possible to explain the existence of such organs apart from such considerations; and it is undoubtedly true that it is to the hints given by teleology that a large part of our knowledge of those organs and of the functions of their various parts is due. Yet when we remember the floods of light which are occasionally and unexpectedly thrown by new luminous ideas on phenomena which have before defied explanation—when we think, for example, of the effects of such doctrines as Natural Selection, the Struggle for Existence, and Survival of the Fittest—it would surely be more than rash to undertake to determine, once and for all, along what lines progress is or is not possible, and insist that all men shall agree with us.

Moreover, it must not be forgotten that the teleological view is not, by itself, scientific explanation. We have not scientifically explained the existence of the eye when we have made up our minds—however firmly we may be persuaded that we were justified in so doing—that it was intended for vision by a Creator who had power to realise His intentions. We have no conception of such a power or of its modes of operation. Science would require to know at least the means by which it works. Until we know something of these, such a teleological idea, however valuable it may be as a “regulative principle,” cannot claim to be anything else.

The thinker who wishes to find an explanation of nature, or of any of its phenomena, is bound, indeed, to postulate that nature should be intelligible, *i.e.*, that the phenomena and their laws shall

be taken to be in conformity with the requirements of our laws of thought. He is bound to do so, because it is only in so far as he can assume that they really are so that his attempt is reasonable—it is only so, that, as Kant somewhat quaintly expresses it, “Nature itself is possible.”* But he is not, so far as I can see, bound to make any either teleological or anti-teleological assumptions about them. He must, as regards the regulative principles of his investigation, follow the course that appears to him to give the best promise of success.

- I should like, in conclusion, to refer to Kant's arguments on the “transcendental Ideas” and “Ideals” of the Reason, as developed in the *Transcendental Dialectic* in the *Critique of Pure Reason*. One need not be a Kantian to admit that such a “transcendental Ideal of the Reason” as that by which we conceive everything to be referred to its one first cause, is, in fact, nothing but an ideal; that the “Ideas” and principles on which it rests, however valuable they may be as regulative principles, cannot be regarded as in any sense belonging to or established of the phenomenal world. Not only can they, at the most, be *regulative*, and not, in Kant's sense, *constitutive*, but they can be even regulatively binding only on the man who finds that his reason and his intellect require him to adopt them. Whatever else he has done, surely Kant has shown that, in that region, the inconceivability—the apparent impossibility—of one alternative is not by itself a sufficient reason for accepting the other, and he certainly believed himself to have conclusively shown that the very existence of God—which, however, he tells us, it never entered into his head to doubt—is, on the intellectual side, wholly incapable of proof. If this is so—if so powerful, so logical, and so clear-headed a thinker as Kant could come to this conclusion†—we have no right to insist that any thinker should, in his merely intellectual inquiries and speculations, assume Prevision by the Author of the universe or give up his belief in the regularity of nature, and we must answer the question before us in the negative.

* *Prolegomena zu einer jeden künftigen Metaphysik*, secs. 36, *sqq.* Kant, it will be remembered, has defined “nature” “das Dasein der Dinge, sofern es nach allgemeinen Gesetzen bestimmt ist” (*l.c.*, sec. 14). Whether the intellect finds its laws conformed to by nature, or, as Kant holds (sec. 36), “prescribes them to her,” is, from our present point of view, immaterial.

† It must be remembered that it was not a hasty, but a most deliberate conclusion, one which Kant held to be completely established, and to which he often refers as undoubted; *e.g.*, in sec. 55 of the *Prolegomena* he says: “Ich habe . . . nichts weiter über die Anmassungen der transcendentalen Theologie zu erinnern, da das, was die Kritik hierüber sagt, fasslich, einleuchtend und entscheidend ist.”

HAS THE HEREDITABILITY OR NON-HEREDITABILITY
OF ACQUIRED CHARACTERISTICS ANY DIRECT
BEARING ON ETHICAL THEORY?

I.—By D. G. RITCHIE.

THE theory that acquired characteristics are transmitted is very generally referred to as the Lamarckian theory, and the opinion that such transmission is "not proven" as the Weismannite theory. For the former name there is every reason of historical accuracy. Lamarck's contribution to evolutionary biology is bound up with his explanation of species by the inheritance of the accumulated effects of use and disuse. For the mere negative to that theory it is more difficult to find a satisfactory designation. Darwin's name is most properly connected with the theory of natural selection, and has been used in that way by the only other man who might have claimed the theory as his own—Mr. Russel Wallace. But, since Darwin employed his theory of natural selection without discarding the older theory of use-inheritance, it has been possible for "Darwinism" to be used. *e.g.*, by the late Mr. Romanes, in antithesis to Weismannism, though it is in every respect extremely awkward to use "Darwinism" in antithesis to that theory, which, though not Darwin's exclusive theory, is certainly his distinctive theory. By "Weismannism" I must be understood to mean here only the negative part of Dr. Weismann's biological theories, *viz.*, the assertion that use-inheritance is not proven—the positive theories by which Dr. Weismann seeks to explain the fact of heredity having no importance for us in the present discussion. It might be better, indeed, if one could alter the current practice and call the merely negative opinion simply "Anti-Lamarckianism."

1. The psychological theories of Mr. Herbert Spencer and, to some extent, those also of Mr. G. H. Lewes, rest on the assumption of the truth of the Lamarckian theory in biology. The boasted reconciliation of the *a posteriori* and the *a priori* schools in epistemology and ethics—expressed in the formula that there are certain instincts and intuitions and beliefs which are *a priori* to the individual now, but which are *a posteriori* to the race—in the sense of being due to the *experience* of our ancestors—this reconciliation would be based on a misunderstanding, if the Lamarckian theory turn out to be "not proven." So that on any ethical theory which attempts, *e.g.*, to explain the development of conscience by use-inheritance, the biological controversy has a very direct bearing.

2. But I think there has been some tendency to exaggerate the extent of the difference made in sociology, theoretical and practical, by the acceptance or rejection of Lamarck's theory.

A Spencerian and a Weismannite sociologist, if each is sufficiently careful to note the differences between sociological and merely biological evolution, disagree mainly in the relative importance which they have to assign to (a) natural selection and (b) the effect of the environment on each new individual. Thus Mr. Spencer and his followers, in seeking to give an explanation of how moral ideas and sentiments have grown up and changed, admit the co-operation of at least three factors, viz., (1) natural selection; (2) inheritance of what is due to the experience of ancestors; (3) the experience of each individual. If the second of these factors be rejected the relative importance of the other two is increased, and especially the importance of the third factor. It was the common assumption of the older empiricists—and of the intuitionists also—that human nature was everywhere and at all times much the same, and that the enormous differences between individuals and societies were entirely due to the effect of circumstances (climate, forms of government, religious beliefs, education, &c.). In the reaction against this exaggerated opinion of the pliability of the individual nature and under the glamour of biological theories there has been a tendency to ignore the importance of *social inheritance*, as distinct from biological heredity. Even among the higher vertebrates, lower than man, wherever in fact the young are born helpless, a great deal that is often explained by hereditary instinct is probably due to the effect of imitation and education. If the Lamarckian theory be rejected, a butterfly cannot transmit any acquired experience to its offspring; the instincts which determine it to lay its eggs on a plant suitable for the caterpillar, but apparently of no personal interest to the butterfly—such instincts must be entirely due to natural selection. But in the case of social birds, such as pigeons, the art of rearing a family is taught by the more experienced to the less experienced. The prolongation of infancy makes education necessary, and is thus the germ of all that among human beings we call civilisation. Language, tradition, and definite institutions—the objectified mind of man—supply the “social factor” (to use Lewes's phrase) in each individual mind, which, irrespective of hereditary differences, makes the members of one society like one another, and unlike those of another society.

Now if this fact of social inheritance be duly recognised, we see how much natural selection working on human societies differs in its effects from natural selection working in the merely organic world, where such social inheritance is impossible or rudimentary.

The butterfly provides for its offspring entirely through an inherited instinct, however that instinct is to be explained; but human beings provide for their offspring only in part through inherited instincts, and in the main under the influence of the traditions and usages of the society to which they belong. The very struggle for existence between societies, producing, as it does, greater internal cohesion, diminishes the struggle for existence within the more successful societies, and makes natural selection as between individuals relatively less important than in the lower organic world. On the Lamarckian theory of Spencer, the experience of the race is to some extent transmitted "in the blood": on the Weismannite theory, it can only be transmitted in the "general" or objective mind. This makes a considerable difference in the manner in which the problem of the evolution of moral ideas and sentiments has to be dealt with. Unless the theory of use-inheritance can be proved in the purely biological sphere, we have no right to fall back upon it to facilitate psychological or sociological explanations of individual or national sentiments. Even if it were fully proved in the biological sphere, we have still no right to resort to use-inheritance as a cause of variations or resemblances in sentiment, unless we are quite certain that we have eliminated all possibility of the variation or resemblance being due to the social factor operating in each individual's mind after birth: and even then, in dealing with the residual phenomena which cannot be explained in this way by the social factor, we must eliminate what is best explained by natural selection before we can safely fall back on use-inheritance. Natural selection is an indisputable fact, though discussion is possible as to its range: so, too, is the direct influence of the social environment on the individual mind. We must not, therefore, unnecessarily bring in the disputable hypothesis of use-inheritance in psychology or in sociology.

3. But even if the Lamarckian basis and the Spencerian psychology erected on it were thoroughly sound, the application of use-inheritance to explain the *a priori* element in knowledge is an *ignoratio elenchi*. If it were a fact that natural aptitude, *e.g.*, for arithmetical calculation, was more frequent now among ourselves than in early times or among primitive races, this might possibly be accounted for by the accumulated effects of the arithmetical operations performed by our ancestors. (The "fact" is very doubtful; apparent advance in arithmetical capacity is probably due, in the main at least, to the social inheritance of an improved notation, &c., and so far as that explanation is insufficient, to natural selection.) But accumulated experiences cannot explain why $2 + 2$ *must* = 4 and not 5. The "necessity" of the principles of numbers have gained nothing in the course of time, though their implications are

better understood. And *if* there is a necessary element in ethical principles, no accumulation of experiences could increase that necessity or turn an original contingency into a developed necessity. The supposed relevance of the formula that what was *a posteriori* may become *a priori* is due to the misleading manner in which empiricism has been opposed by "Intuitionists." If the necessary element in knowledge depended on principles which were "self-evident" or "immediate" in the sense of being got at without any trouble, "straight away," or which were *a priori* in the sense of being known prior to, *i.e.*, antecedently in time to, experience, the Lamarckian-Spencerian theory might suggest a reconciliation between *a posteriori* and *a priori* schools. But if the necessary or *a priori* element in our knowledge be understood to be simply that portion of our supposed knowledge which we really know—in Cartesian phrase, which we "clearly and distinctly conceive," or, in other words, in respect of which we have attained to coherence in our thinking, so that the false is seen to be the absurd, or self-contradictory, then the biological theory is entirely irrelevant in epistemology. It is of psychological, but not of logical significance.

Now I think that the analogy between mathematical and ethical "principles" is a rather mistaken analogy. Ethical principles are not abstract, but concrete and complex. "Moral laws" cannot be formulated in any manner which will not admit of possible exceptions, unless they are made entirely empty of definite content, like Kant's formula prescribing merely absence of contradiction. Nevertheless ethics does bring us ultimately face to face with a problem which is part of the same problem with which a theory of knowledge has to deal, *viz.*, What is the relation of man to nature? How is "ought" related to "is"? What do we mean by saying that an idea (or judgment) which exists as a psychological fact is "false," that a desire which exists as a psychological fact is "wrong"? Such a problem cannot be solved by going "back and back" to a receding past, by merely stating the order of sequence in time in which events have happened. Whether our ideals of goodness are due entirely to natural selection (of individuals and societies and usages) or partly to natural selection and partly to use-inheritance may be an interesting historical problem; but it has no direct bearing on the problem of what meaning there is in calling anything "good" at all. Only if we can take the ideals of developed human society as affording some clue to the meaning of the "nature" from which man has been evolved, only if with Aristotle we are ready to say that the nature (*i.e.*, the meaning) of a thing is to be found in its "end" or highest realisation, are we able to turn the history of moral sentiments into a Moral Philosophy: and in such a philosophy the question of use-

inheritance is a question of historical detail and not of direct metaphysical significance.

II.--By R. E. MITCHESON.

I find myself in very general agreement with the drift of Professor Ritchie's paper. It seems to me indisputable that Natural Selection, whether with or without the assistance of the doctrine of use-inheritance, is wholly incapable of explaining the ultimate element in morality, of showing why conduct of one kind is so in harmony with the natural order as to survive in the struggle for existence, why conduct of another kind is so against that natural order, so fails to fit in with it, that it must be regarded as a sport or monstrosity, mere flotsam and jetsam, left behind by the general stream of tendency. I agree that Natural Selection, whether helped out by the old doctrine of heredity or not, requires for the explanation of morality a moral element in Nature, which no merely naturalistic theory can properly account for. To this extent I hold, with Professor Ritchie, that the question whether or not acquired characteristics can be inherited does not affect the main point at issue between the chief schools of moralists, does not, in fact, touch the metaphysic of morals.

But while I agree in the main with Professor Ritchie's paper, I doubt whether he has assigned sufficient importance, from the Evolutionist's point of view, to the doctrine of use-inheritance in the Evolutionary theory of Ethics. It seems to me that without this doctrine, that acquired characteristics can be inherited, the explanation of morality on the Evolutionary theory could scarcely have even been attempted. I distinguish between the history and the explanation of morality. The history of the development of a unified system of conduct by selection from a chaos of infinite varieties of conduct might no doubt have been attempted without the doctrine of use-inheritance, but not the explanation of the growth of a more complicated morality from simpler forms, still less that of the origin of the simplest forms of moral instinct.

It is the belief in use-inheritance which has enabled Evolution to pose as the successor and expander of the Utilitarian doctrine of Ethics—that Utilitarian doctrine which, before the advent of Evolution, alone for all practical purposes occupied the field against the Intuitionists. Strong in the belief that experiences could be accumulated and transmitted in the blood, with ever-increasing force from generation to generation, the Evolutionist School made the attempt to explain morality, even in its earlier stages, before "social inheritance," with its possibility of transmitting aptitudes

otherwise than by biological inheritance, could have begun, as a gradual discovery of the "useful," the ideas derived from such accumulated experience of the usefulness of one kind of conduct and hurtfulness of other kinds being transmitted to posterity from the remotest beginnings of conscious life; and the transmission being further aided by Natural Selection, which would preserve those individuals who inherited such experience in the highest degree, and those races in which the tribally useful was regarded as well as, and in case of conflict in priority to, the individually useful. Developed morality, as a blend of egoistic and altruistic instincts, depended, according to this theory, upon that accumulation of experience from which those instincts derived all their content. Without such inherited experience, those instincts would be vague, empty, and undirected. With such inherited experience, it seemed almost as if the instincts even in their simplest forms might be explained, for the problem was pushed back and back from generation to generation and from race to race, until there appeared no limit to the process. No doubt a subtler analysis would reveal an ultimate residuum of moral tendency which was not explicable even with the combined aid of Natural Selection and Use-inheritance: certain simple altruistic and higher egoistic instincts, the origin of which as varieties was never really explained, although their transmission in preference to other varieties was explicable by Natural Selection. Nevertheless, this residuum appeared so small and remote that its existence could without much difficulty be disguised or passed over.

From such Naturalising of Ethics, the main ground is completely cut away, if the results of experience cannot, in the earlier stages before social inheritance is possible, be transmitted by direct biological inheritance. We are then thrown back for the earlier stages on Natural Selection alone, which can only select from such varieties as it finds already existing in the race; and we are driven to the position that those moral varieties of conduct, which Natural Selection preserved and carried forward to be more fully developed by "social inheritance," must have been, to start with, of a high and complete order, far removed from those simplest instincts to which current Evolutionary teaching had professed to lead us back.

I do not wish to be in any way misunderstood as thinking that the Naturalistic explanation of morality, even with the assistance of the theory of the heritability of acquired characteristics, was ever more than a splendid failure. I agree that it never touched the real questions at issue, why certain conduct was in fact useful, why instincts should exist in favour of what was useful to self or others, rather than of what was hurtful. But I attribute far more importance than Professor Ritchie appears to do to the heritability of acquired

characteristics as the main weapon of the Naturaliser of Ethics, and I can, in fact, hardly believe that the naturalistic explanation would have been so long defended, if reliance had not been placed on the possibility of pushing the problem further and further back by the theory of the gradual accumulation of experience by use-inheritance.

If it be once admitted that the moral variety is simply among many varieties of conduct that one which, in the economy of nature, is found to survive, it becomes clear, at once, that no explanation whatever is thereby given of the origin of that variety, or of its harmony with the order of nature; and we are forced to fall back on an intuitionist explanation, which perhaps, after all, amounts merely to the confession that no explanation of the moral ultimates can, in fact, be offered.

III.—By R. J. RYLE.

Professor Ritchie is, I think, quite justly dissatisfied with the practice of designating by the name "Weismannism" the opinion of those who dispute the inheritance of parentally acquired characters. Mr. F. Galton had long before thrown doubt upon the Lamarckian theory of heredity; and in an edition of the late Sir Thomas Watson's *Treatise on Medicine*, which was published in 1843, I find the author quoting with approval the opinion of the great anthropologist, Dr. Pritchard, in favour of the most decided "Weismannism." Dr. Pritchard's opinion, as quoted by Sir Thomas Watson (for I cannot find the passage in the *Races of Man*), was, that "all original or connate bodily peculiarities tend to become hereditary, while changes in the organic structure of the individual from external causes during life end with him."

Passing to the speculative problem, we may, I think, advantageously compare somewhat more explicitly the two theories of heredity. Shortly stated, the Lamarckian view as expounded by Spencer and Lewes is, that what is inherited is not merely a particular mode of feeling, or a particular susceptibility, or capacity, but is a consciousness of the utility of certain impulses or modes of feeling.

Spencer's actual words are as follows:—"The experiences of utility organised and consolidated through all past generations of the human race have been producing corresponding nervous modifications, which, by continued transmission and accumulation, have become in us certain faculties of moral intuition."* Now, whether

* The words quoted occur in the letter to Mill, *Data of Ethics*, p. 123.

by experiences of utility we mean a passive subjection of an organism to favourable circumstances, or a conscious apprehension of the character of such circumstances as favourable, the Anti-Lamarckian remains unconvinced that any such impressions upon the nervous organisation are transmitted by inheritance.

If, then, the reconciliation of the *a posteriori* and the *a priori* schools is to be effected by adopting the view of the origin of moral intuitions contained in Mr. H. Spencer's well-known letter, biology may, I think, be said to have added a final objection to an hypothesis already severely shaken.

But the rectification of the statement of heredity which characterises the Anti-Lamarckian position, implies, I think, a conception of the principle which does not require any reconciliation of opposing views.

On the Anti-Lamarckian view the *absolute origin of the primary elements* of any of our modes of feeling or cognition is not accounted for by experience, but the preservation of certain elements to the exclusion of others is held to be so accounted for. Experience (using the word in the widest sense) has been the field in which, by prolonged and oft-repeated steps of trial and error, certain groups of feelings and impulses have, out of many variations in quality and combination, been selected, and have become the factors of what we call our moral sense.

Professor Fowler seems to me to have stated very clearly this view of our moral constitution in his *Progressive Morality*, p. 128:—"Human nature," he says, "in its last analysis seems, so far as it is concerned with action, to consist of certain feelings or impulses, and a power of comparing with one another the results which follow from the gratification of these feelings. The one group of feelings—the egoistic—was developed by and adapted to personal needs. The other—the altruistic—was developed by and adapted to the manifold requirements of family or tribal life."*

The Anti-Lamarckian view is much more modest in its claims than the Lamarckian. All that a cautious Anti-Lamarckian would care to claim in the present state of our knowledge of biology and physiological psychology is, that capacities for feeling in a particular way or (in language of physiology) a nervous organisation adapted to respond in one way rather than another, is what is inherited.

Now in such a claim there is, I think, nothing that is not, generally speaking, in accordance with any theory of Ethics which admits, in whatever language, that man is a being, who has, to use

* In this quotation I have slightly condensed, but without altering the sense of the original passage.

the thoroughly appropriate phrase of old English moralists, a moral constitution.

Whether we choose to say that man is a part of nature when he is under consideration as a knowing and moral being, or, whether we share the qualms of Professor Green upon this subject, we have as much right to say that the moral sense is hereditary in man as we have to speak of his colour sense as hereditary. Nor do I see any ground for complaint on the side of the *a priori* school.

I hold that our moral sense is what it is, because the process of natural selection has determined, and is still in process of determining, which capacities for feelings and for responsive impulse are best for human life.

These capacities are innate. We do not make them and we cannot unmake them, and they are the conditions on which our moral life is based. Professor Wallace in his book on Kant describes the Kantian *a priori* as "conditions in the mental constitution which make us know or estimate things in the way we do." He goes on to say, "Evidently they are no innate ideas. But they are pre-suppositions without which knowledge is impossible." The capacities for feeling or response which are inherited by all but idiots, and which are the elements out of which our moral constitution is built up as we pass from infancy to adult life, might, as it seems to me, be described in exactly similar language. They are *a priori* not merely in the sense that in point of time they precede the performance of any moral action, but also in the sense that without them the actions, even if materially the same, would have no moral character.

I cannot agree with Professor Ritchie in his concluding opinion that the problem concerning the mode of origin of our ideals of goodness is only an interesting historical problem, and that its settlement has no direct bearing on the problem of what meaning there is in calling anything "good" at all. If a person were to ask me what meaning there is in calling a thing (suppose a food or a bodily habit) "wholesome," it would, I think, be not merely an interesting historical problem to set before him the whole set of physiological conditions and consequences, but it would be an answer to his question in the only terms in which an intelligible answer can be found. So too, if I am asked why a desire is right or wrong, my answer, if it is not to be the exhibition of a law empty of definite content, must be found in a reference to that personal and social life history of man in which heredity is one factor. Any other answer is practically impossible.

In Mr. Mitcheson's paper I find myself unable to appreciate the exact nature of the difficulty which he raises in his first sentence.

He holds that natural selection is incapable of showing why conduct of one kind is so in harmony with the natural order as to survive, while another fails to do so. My answer is simply that the natural order (to use his expression) of human life is such that conduct of one kind is more conducive to success than another in the constant effort of man to adapt himself to the circumstances in which he lives, including under the term "circumstances" those which are social as well as those which are merely physiological.

I quite agree, however, with his next remark that Natural Selection requires for the explanation of morality a moral element in Nature. Seeing how widely different is the ideal of his good, which even the average man now sets before him, from that which would content the modern representatives of his savage ancestry, I should say that the moral element in Nature is conspicuous; for man, as thus studied, is a part and no unimportant part of Nature. Similarly, if by "merely naturalistic" theory is meant theory which takes account only of man's distinctively animal capacities, then of course no account can be given of his moral being. If, however, "naturalistic" means descriptive of his whole nature, then nothing better than a purely naturalistic theory can be wanted.

Further on in his paper, Mr. Mitcheson appears to me to do less than justice to the discussion which the subject of instinct has received from Darwin, Romanes, Weissmann, Lloyd Morgan, and a host of others. It is surely too late in the day to hazard the assertion that, apart from inherited experience, an instinct must necessarily be vague, empty, and undirected. It would be hard to account for the infant's instinctive efforts for food as inherited experience: still more so to account for such instinctive activities as occur but once in a life (as with some insects) on this principle. Yet there is nothing vague, empty, or undirected about these instincts. Nor can I see upon what grounds we are bound to assume with Mr. Mitcheson that "those moral varieties of conduct which natural selection preserved and carried forward to be more fully developed by social inheritance must have been, to start with, of a high and complex order."

The study of the development of the moral sense in children, and in the wider sphere of history and anthropology, surely points to the probability that the earliest moral varieties of conduct in the race, as in the individual, were of a low and simple order.

I am surprised again to find that Mr. Mitcheson does not allow that the "Naturalistic" explanation of Morality ever touched the real question at issue, when I read his explanation of what he holds to be the real questions at issue. If he holds that the real question is why certain conduct was in fact useful, or why instincts should

exist in favour of what was useful, then, surely, these are the very questions for which a natural science must give the answers. These *are* the questions with which the Natural History of Man and his dwelling-place has been concerned, not wholly without result, from the earliest ages to the present time.

If, however, the real quarrel with the attempt to form a natural science of Morals is that no explanation is given of Moral ultimates, since the ultimate origin of the variations in those elements of human capacity upon which Natural Selection has acted, remains obscure—then Naturalistic Ethics is no worse off than intuitionistic ethics, since the intuitionist explanation is said to amount to the confession that no explanation of Moral ultimates can, in fact, be offered.

I should say that I accept Professor Lloyd Morgan's definition of Instinct:—

"Instinctive activities are those organised trains or sequences of co-ordinated activities, which are performed by the individual in common with all the members of the same more or less restricted group, in adaptation to certain circumstances, oft recurring, or essential to the continuance of the species."—*Animal Life and Intelligence*, 1st edit., p. 423.

REID AND THE PHILOSOPHY OF COMMON SENSE.

By ARTHUR BOUTWOOD.

WE owe the works upon which Reid's memory depends to the shock given him—no lighter word seems adequate to the fact—by the *Treatise of Human Nature*. Just as Hume awoke Kant out of his dogmatic slumber, and sent him to the study of the causal nexus, and of synthetic judgments, *a priori*, so he tumbled Reid out of the brilliant cloudland of Berkeleyan phantasy in which he had been contentedly dreaming, and sent him, happily for us, not to the criticism of logical judgments, but to the criticism of life. Reid's early allegiance to Berkeley and the debt of awakening which he owed to Hume are both confessed by him in so many words. In the tenth chapter of the second of his *Essays on the Intellectual Powers of Man*—the chapter headed, "On the sentiments of Bishop Berkeley"—we find this fragment of autobiography: "If I may presume to speak my own sentiments, I once believed this doctrine of ideas so firmly as to embrace the whole of Berkeley's system in consequence of it; till, finding other consequences to follow from it, which gave

me more uneasiness than the want of a material world, it came into my mind, more than forty years ago, to put the question: "What evidence have I for this doctrine, that all the objects of my knowledge are ideas in my own mind?" Nor is this all, for, on the 18th of March, 1763, in writing to Hume himself, Reid made a similar declaration. "I shall always avow myself," he said, "your disciple in metaphysics. I have learned more from your writings in this kind, than from all others put together. Your system appears to me not only coherent in all its parts, but likewise justly deduced from principles commonly received among philosophers; principles which I never thought of calling in question until the conclusions you draw from them in the *Treatise of Human Nature* made me suspect them."

There is not the slightest doubt what it was that aroused Reid's opposition, and that converted the early disciple of the Ideal Philosophy—as he afterwards called it—into its most uncompromising critic. It was the scepticism, absolute or nearly so, in which it seemed to issue,—scepticism which appeared to him to cut at the very root not only of philosophy and science, but also of the practical life of man, and of the entire body of religion and morals.

It is true Reid does not charge Hume with holding what Reid conceives to be the full consequences of Ideal principles. He concedes, for instance, that Hume, despite his scepticism, wrote his *Treatise* in the sure and certain hope that it would be read. He finds, indeed, that sceptics in general refrain, even in speculation, from the extreme consequences of their creed—for how otherwise can we explain their confident acceptance of impressions and ideas, when they have rejected everything else?—and he makes frequent controversial reference to their abandonment of their scepticism, as he considers it, when they enter the world of practice, and participate in the intercourse of life. He recognises, in short, that both in theory and in practice sceptics are often less sceptical than their principles seem to warrant, or even to require, but there is not the least doubt that he regarded the scepticism which arose by a perfectly natural genesis out of the Ideal Philosophy as being, both in theory and in practice, little, if anything, short of Nihilism.

Reid's revolt, then, was against scepticism, against Hume's scepticism,—at least as Reid understood it,—against the scepticism which seemed to be the inevitable outcome of the Ideal Philosophy, and which was so nearly absolute that it seemed to vitiate the whole of human thought and effort.

Now, it calls for especial notice that this was not distinctively an intellectual revolt,—it was not the expression of a mere divergence of philosophic opinion,—it was profoundly and specifically a practical

revolt, a moral and spiritual revolt, directed against what Reid thought to be a false philosophy, it is true, but directed against it in the interests of practical life, and of science and of religion, rather than of abstract thought.

Reid frequently refers to the contradiction between the conclusions of the Ideal Philosophy, and the postulates and doctrines of natural science, but although deeply and practically interested in physics and chemistry,—as witness his letters to Lord Kames,—and in all those parts of physiology which bear upon psychology,—as witness the whole content of his Inquiry,—it is doubtful whether the scepticism issuing from the Theory of Ideas would have succeeded in calling him into the arena of controversial philosophy, if its destructive energies had been confined to the domain of science. As a disciple of Berkeley, Reid had already accepted the idealistic construction of Nature, and if Hume had done nothing more than reiterate and reinforce this particular form of idealistic doubt, Reid might possibly not have been seriously disturbed. This much, at least, is certain,—if Reid had been moved primarily by a care for the certainty of physical science, his famous treatises would have possessed a character quite different from that which they actually have. Reid did not question Berkeley's destructive analysis of common beliefs concerning the material world,—at least, not so long as he had the Bishop's theological reconstruction to fall back upon,—but as soon as Hume revealed the consequences of a wider and more thorough application of the same principles of analysis, then Reid drew back. It was the extension of scepticism to religion and morals—to the very domains from which Berkeley had hoped effectually and permanently to exclude it—that led to Reid's revolt. The interests he had most nearly at heart were religious and moral interests, and it was his deep and urgent concern for these that shaped his investigations, and inspired his argument, and gave the characteristic note to his work. Perhaps in this connection it is not unworthy of notice that for many years—the very years during which the main features of his philosophy were shaping themselves in his mind—Reid was actively engaged in the pastoral work of the Presbyterian ministry.

Now, as Reid found the root of the scepticism he opposed in the distinctive doctrine of the Theory of Ideas,—in the doctrine that we do not really “perceive things that are external, but only certain images and pictures of them imprinted on the mind which are called *impressions and ideas*,”—as he found the root of the scepticism he was combatting in this theory of mediate knowledge, it was only natural that as the basis of his own system of practical faith he should advance the opposite doctrine, that we *do* really perceive

things that are external. In other words, because he regarded the doctrine of Mediate Perception as a necessary part of or consequence from the Ideal Theory, it was perfectly natural that he, on his side, should emphasise as fundamental, the contrasted doctrine of Immediate Perception. Just as, to Reid's mind, the doctrine of Mediate Perception was responsible for Ideal Scepticism, so his counter-doctrine of Immediate Perception was the condition preliminary to his practical answer to that scepticism, for it secured to him a real world of men and things independent of his feelings or knowledge, a world in which science and human society, and moral and æsthetic judgments of objective validity were alike possible, in which God and the soul could be apprehended as living realities, and in which human destiny could be worked out, and the dignity of a full manhood (which is the image of God) could be achieved. It was in defence of this fundamental doctrine that Reid made his famous appeal to Common Sense.

Now, what is Common Sense?—or, rather, what did Reid mean by it? This leads us direct to the heart of our subject,—What was the Common Sense to which Reid appealed as final and authoritative?

One possible answer may be disposed of at once. By Common Sense, Reid did not mean the opinion of the crowd,—of the man in the street.

It is true he is constantly appealing to the common sense and common practice of mankind against what he calls "the strange and paradoxical opinions" of both idealists and sceptics. It is to this, also, that he appeals as the ultimate and supreme witness in behalf of those cardinal verities of thought and practice in defence of which he is engaged, and it is upon this that he falls back when abstract or scientific demonstration seems to fail. Sometimes, too, in the very earnestness of his revolt against traditional metaphysic, he appeals to the plain man against the philosopher, to the rude man against the cultivated, in terms which almost suggest that for him Wisdom dwelt only with the illiterate.

Such a degradation of philosophy would, however, have been quite alien to the spirit of Reid's broad, sane Humanism, and whatever meaning a little ingenious ill-will might be able to extract from isolated passages, the general tenour of Reid's works suggests quite a different view.

His frequent insistence upon the mistakes of the uncriticised reason, even if it stood alone, which it does not, should of itself be decisive against so mean a view of Reid's teaching. In more than one connection the crudities of the vulgar are seen to be as little to his liking as, in others, are the absurdities, as he reckons them, of

the metaphysicians, and while the metaphysician is to be recalled from misleading abstractions to a healthy trust in life and nature by the example of the unsophisticated natural man, the said natural man is not unfrequently called upon to submit his beliefs and prepossessions to the correction of science and of a sound understanding. Even when Reid makes one of his most plebeian appeals—that to the day-labourer on behalf of the real existence, independently of consciousness, of “the quality or virtue in bodies which we call their smell,”—it is, in so many words, a *sensible* day-labourer that he calls to witness. Perhaps, too, we may observe in passing, a writer who seriously held the supremacy of the natural man would not appeal, as Reid did, for the decisive and critical judgment on his work to “the candid and discerning Few,” who are alone capable of attending to the operations of their own minds, who are, therefore, the only competent judges in such matters, and to whose authority, if they approve, the Many will at last yield, as, Reid adds with charitable optimism, they always do.

Particularly interesting in this connection, are Reid’s observations on natural causation,—on the nature of physical causes. He discusses the matter at some length with Dr. James Gregory. His fundamental doctrine is briefly but sufficiently set out in a letter dated the 30th July, 1789, which comments upon the Introduction to Dr. Gregory’s *Philosophical and Literary Essays*. “Power and activity,” he there says, “are first conceived from being conscious of them in ourselves. Conceiving of other beings from what we know of ourselves, we first ascribe to them such powers as we are conscious of in ourselves.” The same subject is also dealt with in his *Essays on the Active Powers*. In the first of those Essays—that “Of Active Power in General”—he summarises the matter as follows:—

“ . . . It is a general prejudice of our early years and of rude nations when we perceive anything to be changed, and do not perceive any other thing which we can believe to be the cause of that change, to impute it to the thing itself, and conceive it to be active and animated, so far as to have the power of producing that change in itself. Hence to a child, or to a savage, all nature seems to be animated; the sea, the earth, the air, the sun, moon, and stars, rivers, fountains, and groves, are conceived to be active and animated beings. As this is a sentiment natural to man in his rude state, it has, on that account, even in polished nations, the verisimilitude that is required in poetical fiction and fable, and makes personification one of the most agreeable figures in poetry and eloquence.

“The origin of this prejudice probably is, that we judge of other things by ourselves, and therefore are disposed to ascribe to them that life and activity which we know to be in ourselves.

"A little girl ascribes to her doll the passions and sentiments she feels in herself. Even brutes seem to have something of this nature. A young cat, when she sees any brisk motion in a feather or a straw, is prompted by natural instinct to hunt it as she would hunt a mouse.

"Whatever be the origin of this prejudice in mankind, it has a powerful influence upon language, and leads men, in the structure of language, to ascribe action to many things that are merely passive, because when such forms of speech were invented those things were really believed to be active."

Reid's own opinion, as he avows it to Dr. Gregory, is that nothing can be an efficient cause but an intelligent being, but this philosophical conception he is careful to distinguish from that which does duty in the physical sciences. "I think," he writes to Dr. Gregory, on the 23rd of September, 1785, "I think we agree in this, that a cause, in the proper and strict sense (which, I think, we may call the metaphysical sense,) signifies a being or mind that has the power and will to produce the effect. But there is another meaning of the word cause, which is so well authorised by custom that we cannot always avoid using it, and I think we may call it the physical sense; as when we say that heat is the cause that turns water into vapour, and cold that cause that freezes it into ice. A cause, in this sense, means only something which, by the laws of nature, the effect always follows."

"We perceive," he says in another place, "no proper causality or efficiency in any natural cause, but only a connection established by the course of nature between it and what is called its effect."

Now, here we have a case in which Reid unmistakably regarded as erroneous or, at least, as seriously misleading, a natural and universal belief of such strength that it has given permanent form to the languages of men and continues to control their thought even after they have seen the error of it. Whatever, therefore, Reid may have meant by Common Sense, it is clear from this that he did not mean the opinions or prejudices of rude folk, of the vulgar, nor the uncriticised deliverances of the unenlightened understanding. What, then, did he mean? Now, I do not think it possible on a first view of Reid's works to gather from them any account of Common Sense that is quite definite and satisfactory. He often defines it, and still more often illustrates it,—illustrates it by alternative phrases and expressions,—but his definitions and illustrations vary according to the exigency of the moment, and, at first sight, it is not easy to reconcile them, or, at least, not easy to unite them in one general view which shall embrace and express the truth of each.

One of Reid's commonest appeals—one by which he more

frequently almost than by any other illustrated his doctrine of Common Sense,—is that to general testimony or consent. This seems, at bottom, to be an appeal to the constitution of human nature. He turned to universal practice and belief and experience as revealing the fundamental principles involved in human nature and in human life. In fact, the appeal to the constitution of human nature is even more prominent in his works than that to general testimony. In many cases it appears as a direct appeal to the trustworthiness of human faculties. Our faculties, he says again and again, often in so many words, we have no alternative but to trust, for we could only criticise them, if God were to give us a new set for the purpose, and, even then, the testimony of these additional powers would have to be accepted upon trust,—upon the strength of its own intrinsic evidence.

Look for a moment at Reid's position. He found himself face to face with a scepticism which, as he honestly believed, contradicted, or analysed into insignificance, some of the most widely-spread beliefs of mankind,—beliefs which in some cases, at least, (and those the most important) seemed to spring direct from the normal exercise of the ordinary and essential faculties of humanity. It was, therefore, perfectly natural that he should, in the first place, point out that human faculties are, as he says, the natural and indispensable light of both the just and the unjust,—not only of the plain man in his plainness, but also of the sceptic in his doubt,—and that he should appeal to the native and general convictions of mankind in favour of the trustworthiness of them, and should claim on the strength of their testimony, to reinstate beliefs which Scepticism, on the strength of its analysis, has claimed to reject.

This is his position,—the doctrines alleged are true, because they rest upon the direct testimony of our faculties, and that they do so rest is made apparent by the appeal to universal testimony.

Free trust in the essential powers of manhood, both in speculation and in practice,—this is what Reid is here contending for, and, if not in itself, then, at least, in its postulates and suggestions, it seems to take us nearer to the real heart of his thought and feeling than any of those other and more familiar principles which, in different parts of his treatises, appear for immediate and, perhaps, limited purposes as authoritative and ultimate. Some of these essential powers are necessary even to the most sceptical Scepticism,—necessary as furnishing its basis, still more obviously necessary as furnishing its instruments,—and yet more of them are acknowledged and used, even by the most nihilistic of thinkers, when they leave the fine-drawn analyses of their closets, and take part in the common practical life of the world. Now, all our faculties—as faculties—are

intrinsically equivalent. Since, therefore, it is impossible to discriminate between them in point of trustworthiness, it is the plain duty of a sound understanding to place an equal confidence in each,—to assign to each a share of essentially equal intrinsic value in giving form and order to the content of experience, in determining the direction and character of practice, and in guiding the interpretative exercise of the speculative understanding.

It is this conviction of the trustworthiness of our faculties that is the support of Reid's distinctive doctrine of Immediate Perception. It is true that his vindication of that doctrine frequently, more frequently than not, takes the form of appeals to Common Sense, to general testimony and practice, and to the sober practical judgment of mankind, but this summoning of universal testimony would have been useless unless each individual witness could affirm a personal certitude.

All this, the connection between Reid's appeals to Common Sense, and to human nature, and between these and the doctrine of Immediate Perception, is well illustrated by his theory of natural judgments, or judgments of nature.

Now, by judgment, in this connection, Reid does not mean discursive judgment,—about that he is quite clear,—and he uses the adjective "natural" to indicate that judgments of this category are made for us and not by us,—*for* us by nature, by the constitution of our own nature, and not *by* us, by means of the discursive reason. He confesses, indeed, that, perhaps in strictness, they ought not to be called judgments at all. They are antecedent to judgment as we ordinarily regard it, for which they furnish the material, and it is only by a sort of analogy that the name is applied to them. If we have regard chiefly to the content of these judgments, we may say that they constitute that body of primary and fundamental truth which is given directly by experience,—that body of elementary and ultimate truth which is prior to all our reasoning, and which furnishes the material for the exercise of our reasoning, but which cannot be, in any real sense, the result of it. Now, this content of primary and essential truth comes to us as the immediate deliverance of our faculties, as the direct result, as it were, of the contact in experience between those faculties and the world of reality around them, and if we accept it, it can only be because we trust the faculties through which we receive it.

Among the foremost of the truths thus delivered by Nature to our keeping is, Reid urged, the reality and immediateness of our knowledge of extra-mental existence. This is to him pre-eminently a judgment of Nature, a truth which we receive and do not make, and although he often seeks to confirm men in their apprehension of

it, he never seeks to demonstrate it, for it is, in the strictest sense, *supra logicam*. It rests upon a native and spontaneous conviction of the human spirit,—upon a natural judgment, as he would say,—and most frequently he limits himself to quickening and confirming this conviction by calling into evidence the world-wide beliefs and practices of mankind, which he holds all rest upon it. When he attempts anything more, it takes the form of a direct appeal to the trustworthiness of our faculties, to the natural and spontaneous confidence of the human spirit in its own experience.

It was the confidence Reid thus reposed in the witness of human faculties that led to his celebrated advocacy of the inductive method in psychology and physiology. That method had just received brilliant and startling application at the hands of Newton. It is true that Newton's discoveries had not yet been popularised, had not yet found their way into the text-books, so that men had to go direct to the discoverer's own works for an effective acquaintance with his method and its results, but they went, or, at least, "the candid and discerning Few" went, Reid among them, and they found, or they thought that they found, a new key to the interpretation of the Universe, and one which would open many a door that had baffled older instruments of investigation. To their new enthusiasm, Bacon and Newton were the founders of a new science of nature and of life,—the heralds, or rather the beginners of a new epoch, not only in the history of human thought, but in human history itself. To Reid, Newton's *regulæ philosophandi* were maxims of Common Sense, practised every day in common life, and seemed so essential to a sound philosophy as to justify the declaration that "he who philosophises by other rules, either concerning the material system or concerning the mind, mistakes his aim." It seemed to him that it needed nothing but the thorough application to psychology and the allied sciences of the same method that Newton followed,—the method, that is, of induction from carefully observed particulars,—to render the emancipation of the human mind complete, and effectively to inaugurate the third great era in the history of mankind.

It was this application that Reid himself essayed to make, or rather towards which he took the first steps. It seemed to him an essential part of the work of philosophy to tabulate and systematise the principles upon which the human mind proceeds, not only in what Reid called its natural judgments, but in its natural and practical activity generally. The result of his labours in this direction is given in the fifth and sixth chapters of the sixth of his *Essays on the Intellectual Powers*. I do not propose to detain you by quotation, for we are not called upon here and now to estimate

the philosophic or scientific value of Reid's enumeration. We are only concerned with it in so far as it throws light upon his central doctrine of Common Sense. The point of connection seems to be this:—these alleged principles are intended by Reid to express the general modes in which our faculties work, and it is because they are held to do this, and not primarily because they are gathered by induction, that Reid seeks to make them fundamental in philosophy. What Reid seems to be really relying upon is the testimony of our faculties. To know what that testimony is, he falls back upon observation, and then, by means of induction, he presents the results of his observation as a more or less systematised body of principles, which are truly indicative of the working and testimony of our faculties, because formed and elaborated by a true method,—the method of observation followed by induction,—but which can be regarded as authoritative and ultimate, as supreme in guiding the critical estimate of thought and practice, only because they are so indicative, and not in virtue of the method by which they are gathered. Here, then, as elsewhere, it is in the faculties themselves that Reid's actual trust is placed.

We are now, perhaps, in a position to see more clearly the meaning of Reid's many references to the plain man. In these also he seems to be virtually falling back upon the testimony of human nature, upon the witness of human faculties.

It is not to the plain man as contrasted with the educated, but to the plain man as contrasted with the artificial,—to the plain man not as uninformed or untutored, but as natural and normal, that Reid's appeal is really made.

To the Aberdeen professor, scepticism, such as he opposed, was a morbid and not a natural product of the human mind. It was pre-eminently the token of a certain artificiality of thought, and of a greater or less departure from sound judgment and healthy feeling, just as the Ideal Philosophy out of which it sprang was, for him, fundamentally artificial and out of touch with the broad certainties of healthy practical life. As the parent, so the child. It was precisely to those same certainties that Scepticism was not true, and it was against the artificial thought that did not regard them, and the equally artificial temperament that did not respond to them, that Reid appealed to the testimony of the plain man, in whom the true witness of human nature had not been distorted, nor the normal deliverances of the human faculties weakened or obscured.

An appeal to the testimony of human faculties and to the constitution of human nature might, however, only succeed in showing that we are *compelled* to think and believe certain things without giving us any assurance that our thought and belief are true. Now,

curiously enough, that feature of our natural judgments and of the deliverances of our faculties in general, upon which Reid most frequently seizes as characteristic, is this very necessity. We are compelled, doomed, as he says in one place with most sinister suggestion, to believe this or that, and even if we try to rid ourselves of that belief, or to act independently of it, we cannot. So frequent is this mode of expression with Reid and so important the part it plays in his arguments and expositions, that it is quite comprehensible that commentators have found in it the indication of an essential affinity between Reid and Kant, and quite comprehensible, too, that in the later history of the Scottish School this emphasis on necessity has developed into a doctrine of relativity perilously near to Nescience.

Yes, all this is quite comprehensible, but only, as it seems to me, by a fundamental misconception of Reid's position.

The main purpose of Reid's work was to counteract the destructive tendencies of the then dominant Ideal Philosophy. Now, this purpose would have been ill-achieved if Reid had rested content with merely subjective necessity and certitude. The Ideal Theory had, as Reid conceived it, issued in a scepticism or nihilism which was inconsistent with the reality of the external world of men and things,—of physical nature and of human society alike. In words and in principle it was, of course, equally inconsistent with belief in the spiritual nature of man,—with belief, that is, in the soul as a real entity; but possibly, even in the scepticism of the most sceptical, this latter natural belief still lingered, not only as shaping their practical view of things,—their practical view, I say, not their speculative,—but, also, as tacitly and unconfessedly furnishing a theatre upon which impressions and ideas could appear and move, and a centre of reference which, in some measure, unified them and which rendered even the sceptical account of their order and association possible. Reid himself, although at one time a follower of Berkeley, had never accepted the more extreme consequences of the Theory of Ideas, and when his eyes were opened to them by the *Treatise of Human Nature* he instinctively rebelled and reconsidered his entire position. At the bidding of Berkeley he had been content to abandon belief in the extra-mental material world, but when Hume sought to exact a further renunciation, and called upon him to abjure belief in the real existence of God and the soul, then he refused. That he himself was a living soul, and that there was a living God above him, Reid, so far as we know, never doubted, and it was with the reality which the soul thus seemed to possess as an extra-mental personal subject,—a reality which, he held, the Sceptics themselves could only deny by doing violence to their own natural convictions,—it was with this that he contrasted the unreality that fell over the theatre of the soul's

life when it was resolved into impressions and ideas. The logical result of Nihilism may have been a dream without a dreamer, but to Reid its practical result was this,—a real soul amidst unreal surroundings.

It was precisely to restore the reality which the sceptical analysis had thus seemed to dissipate that Reid took up his pen. His object was to vindicate the reality of the soul's surroundings so that they should be seen to be real in the same sense, with the same extra-mental reality, as the soul itself. Now, this object he could never have hoped to attain by merely pointing to a subjective necessity imposed upon us by the constitution of our nature and the natural working of our faculties. Such a refutation of Hume would have been in reality nothing but a systematic vindication of him, and would still have left the living thinking man—real with a reality of which neither impressions, nor ideas, nor any of the forms of thought or operations of the mind, nor any of the natural furniture of the mind, merely as such, could give adequate account,—it would still have left this real man surrounded by a world of his own making,—rather, perhaps, of his own phantasy,—of which the only thing that could be said would be this, that if real at all it was not real in the sense in which he himself was, that, as contrasted with himself and his own reality, it was the unreal.

It is not surprising, therefore, to find that numerous and important as Reid's references to necessity of thought and belief undoubtedly are, this subjective necessity is not the only result of his appeal to the constitution of human nature and the witness of human faculties. On the contrary, there is at least one other result of quite a different significance which although certainly less conspicuous is, equally certainly, not less important, and I would submit to you that it is to this less prominent feature in Reid's argument, and not to his more frequent insistence upon necessity, that we have to look for the most direct and fruitful suggestion as to his real meaning.

This other and more significant result can, perhaps, be best set forth by saying that for Reid the testimony of our faculties gives us not only certitude, but illuminative or objective certitude. We cannot think or believe otherwise than our faculties permit, that is obvious, but these faculties of ours are the instruments of truth, and the witness of our faculties, whether it concerns the soul or its surroundings, is intrinsically and essentially a witness to extra-mental reality, so that through that witness we come to know reality that is independent of our act of knowing, and independent of the mind or faculty that knows. Our faculties are in no fundamental sense *constitutive* of reality, they are *declaratory* of it, and the reality

which they declare concerning the world of men and things is reality of the same extra-mental kind as that which we attribute to the soul, and which, indeed, we only attribute to the soul in virtue of their testimony.

This illuminative certitude is, as one might naturally expect, most insisted upon by Reid in those sections and chapters of his treatises that deal with Immediate Perception and the other natural judgments suggested by the senses. These, however, are not the only means by which we reach objective certainties, by which, as it were, we pass out of ourselves and illuminate the reality beyond consciousness. Our æsthetic faculties are the instruments of a similar achievement. Listen, for example, to the following passage from the chapter on "Grandeur" in the last of his *Essays on the Intellectual Powers* :—

" . . . if we hearken to the dictates of common sense we must be convinced that there is real excellence in some things, whatever our feelings or our constitution be.

"It depends no doubt upon our constitution whether we do or do not perceive excellence where it really is, but the object has its excellence from its own constitution and not from ours.

"The common judgment of mankind in this matter sufficiently appears in the language of all nations, which uniformly ascribes excellence, grandeur, and beauty to the object and not to the mind that perceives it. And I believe in this, as in most other things, we shall find the common judgment of mankind and true philosophy not to be at variance."

After this glimpse of Reid's æsthetic, it is not surprising to find that both his teleology and his ethics introduce us to realities of the extra-mental order. Belief in design is, with him, no mere regulative principle, it is the gift of a genuine insight. It is quite similar in ethics. "Conscience," he says, "is the candle of the Lord set up within us to guide our steps." In a certain sense, therefore, it must throw a trustworthy light upon the order of the external world, sufficient, at least, to justify the effort after goodness, and to warrant the hope for moral achievement. It is primarily concerned, of course, with our personal acts and motives, but that, to Reid's thought, it also stands in some direct veridical relation to the extra-mental world of practice seems undeniable. Some such conviction as this seems to lie behind the whole of Reid's account of the moral faculty and moral judgments, although we can rarely find quite unequivocal evidence of its presence.

The point we have now reached is this,—that Reid's appeal to Common Sense was, really, an appeal to the illuminative certitude of the testimony of our faculties, or, in other words, was an appeal to the trustworthiness of our faculties in revealing extra-mental reality.

As these faculties of ours are our only means of knowledge, we are, of course, shut up to their deliverances. Hence, those deliverances come to us, in a certain sense, with the weight of necessity,—we cannot shake ourselves free from them if we would,—the evidence with which they come is, as Reid said, irresistible. We are, therefore, bound to act upon them, and to accept them, but, be it noted, their necessity does not constitute their truth, and Reid's trust was placed, not in their necessity, but in their evident veracity,—in the manifest reality they set forth.

Just, however, as when it came to a matter of practice, he dealt with his principle of universal testimony,—applying to it material correction and limitation,—so he also dealt with the further principle we have just reached. Our faculties are trustworthy, but sometimes they fail us. They are our sole and sufficient guides to truth, but sometimes they mislead us. Their information is normally correct, but sometimes they misinform us.

"God Almighty," he wrote to Lord Kames, "has given us various powers of understanding and of will. They are all equally his workmanship. Our understandings may deviate from truth, as our wills may deviate from virtue."

Not only may our bodily senses fail us, as in the case of the colour blind, and as when one who has the jaundice sees a body yellow which is really white, but even our reason itself, as he told Dr. Gregory, is so imperfect that we are not exempt from the possibility of swallowing contradictions.

Now, how did Reid meet this new difficulty? In the Essay entitled "On the Fallacy of the Senses," he turns to the explanations and corrections of natural science. In his earlier Essay on "Seeing," he appealed to general testimony:—" . . . all men believe that, as a multiplying glass does not really produce ten guineas out of one, nor a microscope turn a guinea into a ten-pound piece, so neither does a coloured glass change the real colour of the object seen through it, when it changes the appearance of that colour."

In other cases, however, his treatment of the difficulty is more suggestive. He turned, not to science, and not to universal witness,—to what all men believe,—but to the sane man, the man of sound understanding. Whatever mistakes of belief or practice our faculties may lead us into, he never wavered for a moment in his confidence in their general trustworthiness. In our present state our minds, as well as our bodies, are liable to strange disorders, and, "as we do not judge of the natural constitution of the body from the disorders and diseases to which it is subject from accidents, so neither ought we to judge of the natural powers of the mind from its

disorders, but from its sound state General rules that regard those whose intellects are sound are not overthrown by instances of men whose intellects are hurt by any constitutional or accidental disorder."

The normal office of our faculties is to lead us aright, and to tell us the truth, and, just as Reid appealed to the plain man against the artificialities of the sceptic and the metaphysician, so he also appealed to the sane man,—the man of sound heart and clear judgment,—to the normal man, to the man who, in all essentials, is what a man ought to be. "General rules that regard those whose intellects are sound are not overthrown by instances of men whose intellects are hurt by any constitutional or accidental disorder," and, certainly, the testimony of those whose minds are thus sound is not to be overthrown by the evidence of those with a smaller achievement of manhood,—with a poorer experience, or less-developed powers. Just as the practical judgment of the sound mind is decisive against Scepticism, so it is decisive in the cases we are now considering. The appeal is from Philip drunk to Philip sober, and although Philip drunk cannot be expected to recognise the superior authority of his sober judgment, yet it is with his sober judgment that the superior authority does rest, and it is his sober judgment, and that alone, that can guide conduct to a safe and successful issue. In the last resort the decision must lie with the maturer judgment,—with the judgment that expresses the fuller, richer, more developed manhood.

Now, the manhood to which Reid thus appealed is emphatically a progressive one. In the life of the individual the different faculties appear and attain maturity at different times. Each individual faculty has, moreover, its own particular history and development. There are, it is true, certain gifts of nature which are with us from the first,—which constitute part of the original and essential furnishing of our minds, and upon which we cannot improve, but, speaking of the individual life as a whole, we may say that it is a progressive life. Nor is this the privilege of the few; rather does Reid represent it as the prerogative of the many,—a prerogative of which, it is true, they may make but very imperfect use, but which is, none the less, theirs, and which never remains quite unused in any case.

Human nature does not spring into being in a mature and perfect state. At first its faculties are immature and correspondingly imperfect, and it is only by exercise that they can be developed. Even the things of the material world around us are at first apprehended by us but very imperfectly, just, indeed, as they are at first by those who have been born blind, but who receive the gift of vision in adult life. By the discipline of science, however, and by the informal training of everyday life, these faculties of ours become more

proficient and more exact, their deliverances become fuller and more accurate; the obscurity and vagueness that marked their early testimony gradually disappears, and in the place of the dim perceptions of infancy we have the perfect vision of a Newton.

The same process of growth and development can be traced, also, in our powers of reasoning, in our conceptions and judgments, in our appreciation of beauty, and in the life of conscience, and it is very significant that Reid always suggests that it is in the last stage of this history that there is the fullest and most accurate apprehension of truth and of reality. The history of the development of human faculty is not a mere chronicle of inconsequential change,—it is a record of the progressive achievement of truth, of growth into truth as one may perhaps say. Hence it is that the mature, sane judgment of the man in fullest and closest contact with life and reality can always correct the less authoritative judgment of the immature and untutored, and it is to this full judgment, to the last and most complete results of a progressive experience which is a continual growth into truth, that Reid, in the last resort, appeals, and it is in this that he places his ultimate trust.

Nor is this all. There are passages which suggest that the living achievement of truth thus characteristic of the history of the individual, is equally characteristic of the history of the race. I must ask you to note, too, how fully Reid recognised the part played by the social environment in the development of our reasoning and of our moral faculties. "I am very apt to think," he says in his *Essay on Systems of Morals*, "that, if a man could be reared from infancy, without any society of his fellow creatures, he would hardly ever show any sign, either of moral judgment or of the power of reasoning."

If, now, we attempt to combine all these views of development and of progress into one,—never forgetting while we do so that the progress with which we are concerned is essentially a progress into truth,—we shall find, I think, that the final synthesis of Reid's teaching gives us a Humanism of the broadest, fullest, freest sort. It carries us past all secondary and temporary standards, past all intermediate courts of appeal, to life itself, to that living experience which satisfies, justifies, and, in a measure, explains itself.

Stated in bare outline, the conception we have now reached seems to be this:—The human spirit is surrounded by realities of three orders,—by God, in whom it lives and moves and has its being, by the world of nature, and by human society. In the midst of these surroundings it cannot, even if it would, live an isolated life,—this, its nature, and the very conditions of its existence, as the informing soul of a physical body, alike forbid. It is thus, from the first, in

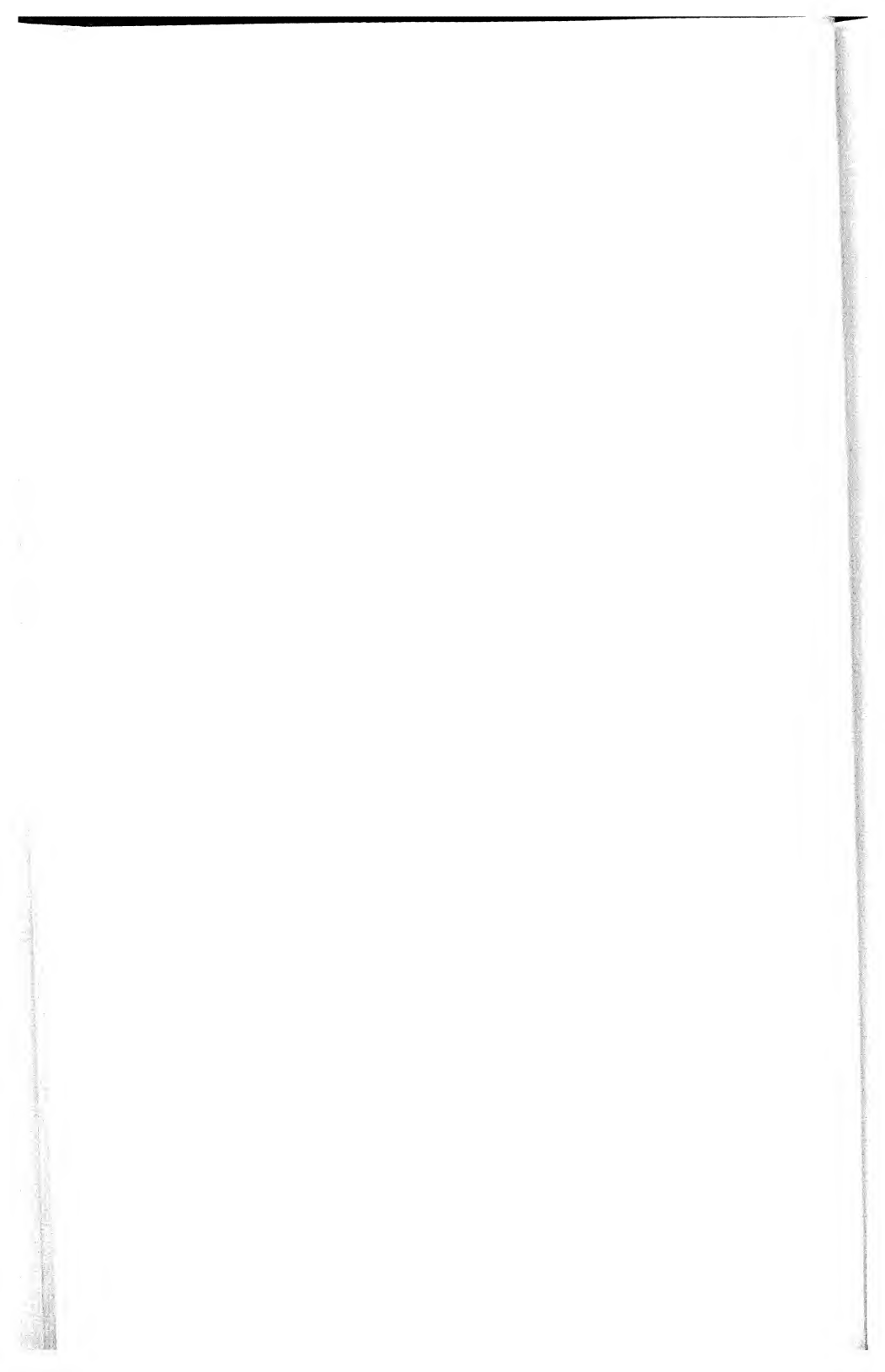
some kind of active relationship with them, and in the experience into which it is thus born, it knows them. Its life, moreover, is a progressive life,—not only does its contact with its surroundings become wider and more varied, but, through the developing and maturing of its own powers, the experience which thus becomes wider becomes also richer. On the one hand we have a physical nature which is daily becoming better and better known, and which reflects itself more and ever more perfectly in this constantly improving mirror of a developing humanity. On the other, we have a human society which is slowly achieving maturity, and which, by the varied incidents and phases of its historical development, is ever making new claims upon the potential manhood of the individuals constituting it. Just as the individual achieves self-realisation—works out, that is, the manhood that is in him—through the changes and discipline of individual life, so, speaking from a point of wider outlook, we may say that humanity achieves self-realisation through the changes and discipline of its historical life. Every time of progressive change, whether for individuals or for nations, is a time of moral synthesis. New conceptions of truth, of goodness and of beauty arise, and, either apart from these, or as their causes or concomitants, changed historical or physical conditions commandingly call to new ways of life, and open up new avenues for individual and social achievement. Thus, the possibility of a fuller and richer life is brought into view, but the life thus seen as possible, can never become actual in individuals without a corresponding development of the individuals themselves. The new conceptions must be taken up and assimilated, the opportunity of new achievement must be met by a corresponding development of character and activity, and the new must be united with the old in the living synthesis of personal life. As the spirit of man is one, so must his life be,—if, that is, it is to attain its highest achievement, or, even, to escape frustration,—and it is precisely because this moral synthesis is not achieved that many a fair morning of promise brings on an evening of cloud and disappointment, and it is precisely because the synthesis is at best incomplete, and because it is rarely accomplished without the loss of some of the positive achievements of the past, that human progress follows the spiral path it does.

Now, it is to this human spirit, thus growing, on the one hand, into clearer and even clearer vision, and into fuller and even fuller apprehension of truth, of goodness, and of beauty, while on the other it is progressively achieving the realisation of the manhood that is in it,—it is to this progressive and progressing spirit and to its confidence in its own achievements, whether of knowledge or of manhood, that the ultimate appeal of Humanism is made, and it is to this same

spirit that Reid's doctrine of Common Sense, as we in these modern days may hold it, also leads us.

Just, however, because Reid's Humanism is complete,—taking account of every part of human nature, of the whole experience of the whole man,—just because of this, its final utterance carries us over into theology and into the life of religion. On the one hand we are told, with evident scriptural reference, that the end of human life and the sum of human duty is to grow into the image of God, to achieve the fulness of that Divine likeness after the pattern of which Reid believed that man had been created; on the other, that whatever of truth or beauty is known imperfectly or partially to us is known perfectly and fully to God, so that as He is, in a sense, the pattern of our manhood, so He is, also, the exemplar of our knowledge.

To pursue the line of thought thus opened up would take us far beyond the necessary limits of this paper, but one can hardly help thinking that in Reid's own mind these conceptions may have been connected with his belief in the Christian doctrine of the Incarnation, —with the Christian doctrine concerning that unique Incarnation by which the Eternal Thought concerning man was made perfectly manifest,—and also with that magnificent Pauline teleology which looks for the fruition of life in those eternal days of changeless light when, in the perfected vision of Him who is the Truth, we shall know even as we are known, and when, “in the unity of the faith and of the knowledge of the Son of God,” we shall all come “unto the perfect man, unto the measure of the stature of the fulness of Christ.”



PROCEEDINGS

OF THE

ARISTOTELIAN SOCIETY

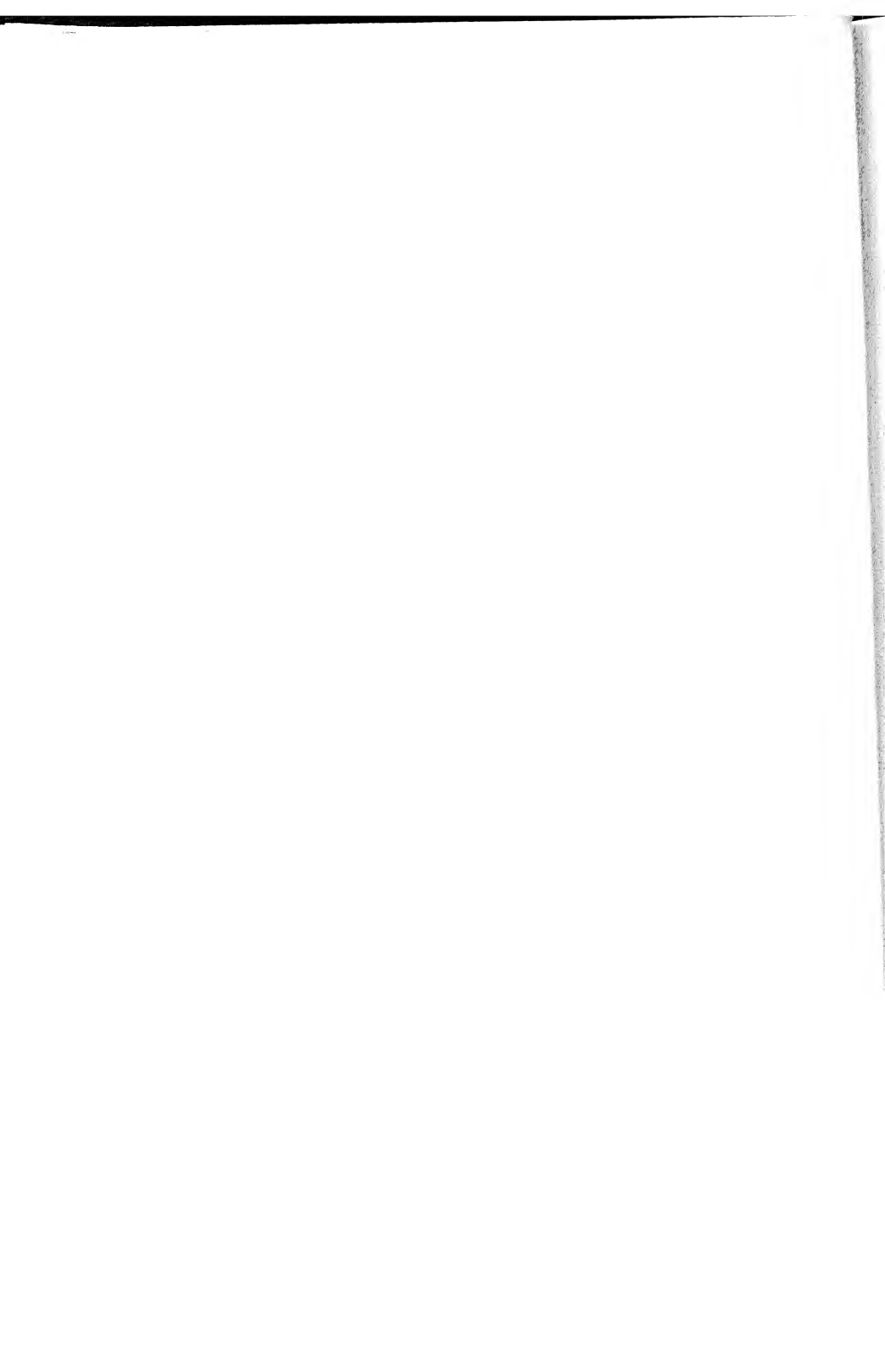
FOR THE

SYSTEMATIC STUDY OF PHILOSOPHY.

Vol. 3.—No. 2.

CONTENTS.

	PAGE
Presidential Address—Time and the Absolute—B. Bosanquet, M.A., LL.D.	3
What is meant by the <i>A Priori</i> Element in Knowledge?—E. C. Benecke	11
Anselm's Ontological Argument for the Existence of God—C. C. J. Webb, M.A.	25
Philosophy and Naturalism—H. W. Blunt, B.A.	43
Professor James on the Emotions—S. Bryant, D.Sc.	52
Kant's Teleology—C. L. Davies, M.A.	65
Symposium—In what Sense, if any, is it true that Psychical States are Extended?—	
I. G. F. Stout, M.A.	86
II. S. Bryant, D.Sc.	90
III. J. H. Muirhead, M.A.	94
The <i>A Priori</i> in Geometry—Hon. B. Russell	97
Symposium—Are Character and Circumstances Co-ordinate Factors in Human Life, or is	
Either Subordinate to the Other?—	
I. B. Bosanquet, M.A., LL.D.	112
II. E. E. C. Jones	115
III. W. L. Gildea, D.D.	117
IV. A. F. Shand, M.A.	120



PAPERS READ BEFORE THE SOCIETY, 1895-6.

PRESIDENTIAL ADDRESS.—TIME AND THE ABSOLUTE.

(For the Seventeenth Session (1895-1896) of the Aristotelian Society.)

By B. BOSANQUET, M.A., LL.D., President.

THE Problem of Time has of late attracted attention, and it is natural that I should refer to it in to-day's address, as a first illustration of the views which I ventured to suggest at the opening of the previous session. I have not, indeed, any startling theory to propound. My purpose is to insist upon certain simple cases and elementary principles, in order, if possible, to clear the ground for a just apprehension of the data *ab initio*. The discussion falls naturally into two parts:—

1. The actual position of Time in our experience.
2. The necessary admission that Time is in the Absolute, in relation to any attempted inference that the Absolute is in Time.

1. I am not attempting to argue from genesis to reality or unreality, but am only taking the facts of genesis as illustrating by concomitant variations the conditions essential to the reality of that which is generated. And this, I think, is fair.

a. It is an old remark, which merely needs recalling, that psychical succession pure and simple is not enough to constitute a temporal consciousness. Not to speak of the animal intelligence, it is clear that the growth of a sense of time in human beings depends on developed attention to the relatively permanent. Adaptation of action to circumstances, as in choosing noon or night for repose, implies no estimate of the duration of intervals at which these circumstances recur. Something that lasts through a period, and so raises the question, "Will the period be long enough, or too long?" seems needed to account for an estimate of Time; and this something is a relatively permanent interest, say, for example, a journey which must be completed before nightfall. Such an interest

confers on the succession of perceptions the indispensable continuity which causes it to be bound up into a whole of duration by comparison of passing perceptions with some perceived unity which runs through and outlasts them. Time arises with this relation—with the sense that a set of perceptions is carrying us forward towards a change the point of incidence of which upon a relatively permanent background (really another set of changes) has interest for us. This is measurement, a case of the principle of enumeration. There must be a general interest which constitutes the motive for the construction of a certain whole by equation with an assumed standard.

The temporal consciousness, then, is not constituted by mere psychical succession or discretion, but involves continuity, as indeed is generally admitted. Our present point is that this continuity means a relatively permanent interest embodied in an element running through the perceptions, and this involves the recognition of a world in which permanent elements have a place. From the first, then, the temporal consciousness is two-sided, and although we may say that the two sides are equally essential to it, yet beyond doubt they tend to change their relation. The mind which is most immersed in succession must have least temporal consciousness.

β. In the developed intelligence of the civilised world, as shown in history and in some forms of science, the temporal consciousness reaches its maximum of importance. The constant ratio which material movements bear to each other, so long as their physical conditions are unchanged, is hypostasised into a real, uniform, and standard duration, although the comparison of successive parts of Time is *ex hypothesi* impossible. The vast system of historical chronology, and the still more far-reaching constructions of astronomical or geological theory are treated as if they were presentations of actual reality, and the temporal order comes to be regarded as an infinitely extended line or procession, which marches away and away so as to separate the extremity of the past by an ever-lengthening interval from the moment of the present.

Now, this single chart or picture—the stream of Time—is a gigantic constructive extension of anything given to us in experience, and though true in the sense that it is useful for certain purposes, it does not represent our whole apprehension of the facts. First, it reduces our private experience of duration to an abstract standard. For the purpose of a common measure, especially with a view to practice, this is plainly necessary. I may live a lifetime of anxiety while the train brings me from Oxford to London, but the hour and a quarter measured against the earth's rotation will be an hour and a quarter still. Great care is needed in criticising abstractions of this kind. It is a dangerous attitude to set up the merely given in

any kind of experience as possessing a clue to reality which is lacking to its methodical unification. I do not feel sure that Mr. Bradley has wholly avoided this danger in his observations on Time in dreams. Nevertheless, sometimes, as in defending the secondary qualities against the ascription of exclusive reality to the primary, we have to resist the mutilation of experience which is carried on under the name of reduction to an objective standard. And thus what may roughly be called the reduction of subjective to objective Time is in some degree analogous to the case just referred to, or—taking a particular instance—to the representation of all kinds of light in terms of ethereal vibrations. For certain purposes the actual perceptions can be standardised in these ways, but this fact does not dispose of their own richer characteristics. It should at least be noted, then, that what may be called personal Time is relative to standards which are variable judged by those equable motions which we assume as objective Time-measures. Taken apart from the mechanical world our private Time-feeling may be much more deeply interwoven than that world is with the whole content of actual life. If we want to judge of ultimate reality, rather than of immediate practical necessities, it is possible that this consideration may assume importance, just as the reality of secondary qualities assumes importance when we come to consider the objectivity of the æsthetic judgment.

Secondly. This infinitely extended past, as presented by history and science, is, to a great extent, a vanishing form. It belongs very noticeably to the middle stage of our knowledge. Intelligence, it might be said, begins by creating Time and Space, and goes on to destroy them. Nay more, from the beginning of its work in creating them, it is *pari passu* destroying them. If we think of the rise of historical chronology, we observe that it represents a period of immature reflection on the unity of history, and a desire to think the historical process as one. Just so with astronomical and geological science. The more that history and science bring before us a unified past, the more closely do we weld it to the content on which we base our construction of the future, and the less do we actually live in a world of temporal succession.

I have pointed out elsewhere that the relation of reality and unreality, by which we characterise the present and the future in the moment of succession, has truth for present practice only, and is transferred to the ordered past solely by an association at the mercy of criticism. The imperfect theory of temporal causation—imperfect, for no complete theory can be stated in terms of sequence—has no genuine bearing on occurrences which are no longer partly unreal, and it is impossible in a system which has become, in every

part equally real and unreal, to separate effect from cause, as something derivative and, so to speak, unnecessary. It is all-important, of course, in evolutionary science, to avoid the prejudice that what comes earlier in time can limit the interpretation to be put upon what comes after it. This prejudice arises from transferring relations of reality and unreality directly from sequence into the ordered whole of experience. But if so, the essential attribute of sequence in time has disappeared. It cannot be said that in the past there is an earlier which is real and a later which is unreal. The true simile to describe our actual experience of Time, in the civilised mind, would be, I have often thought, that of a sort of dropping, which, as it drops, distributes itself over some great crystalline structure, such as to grow and organise itself, not at any one point only, out of the material thus accruing. To resolve the whole structure into an infinite sequence of the dropping process, is a wholly artificial idea, and does not represent the course of our actual experience.

The question of direction may also be raised. Science and history run back as easily as forward. Their actual constructive movement is indeed backwards rather than forwards, and our Time view acquires its character much more from our attention running to and fro along the chronological chart than from our own experience of succession, which all this chronology and construction really tends to dwarf. But this running to and fro in our attention is not a true experience of succession. We have no experience of succession outside the immediate now; and as we stretch out the arm of our constructive chronology as a first endeavour to bind together for our imagination the increasing bulk of our world, we are building up a background against which our experienced succession becomes increasingly insignificant. We may even be said in a very real sense to be enlarging our possible present; for if we have once admitted duration into the present (and how can we keep it out?) it seems hopeless to deny that any period of succession which can be conceived at all, may from some point of view be looked at as a present, that is, as a totality within which the element of succession can be neglected in consideration of its causal or qualitative unity. It cannot be too strongly insisted on, as a mere fact of experience, that a great constructive work, such, for example, as Grote's *History of Greece*, operates mainly to destroy and not to enhance the importance of temporal succession in our knowledge. The history so presented is in course of transmutation from the form of successive occurrences to the form of a systematic unity, causally connected together, and logically and ethically in the closest possible proximity to ourselves; in it we are beginning to shake ourselves

free from the form of bare chronology which marks the most meagre and hungry stage of the imagination, when it first feels the yearning for a comprehensive historical unity.

It is hardly necessary to labour this point further, or it would be possible to illustrate in many ways the connection between what might be called the middle intellectual level and the ascription of great importance to temporal succession. The doctrine of causation alone, with its temporal relation to practice, and its non-temporal relation to systematic theory, amply suffices to explain the difference of attitude with which we are concerned. Succession may be for us the dominant type in which our lives are cast, or merely the inlet by which new formative material is added to our permanent world. And the difference, though only of degree, cannot be wholly insignificant in philosophy.

When we come to deal with the higher achievements of the mind, with Art, Philosophy, and Religion, we find that the Time-spirit has practically lost his power, or rather, has become the spirit which conquers Time. He presents us with the quintessence of the ages, but the process of distillation is lost, and only the spirit remains. We absolutely refuse in these kingdoms of experience to find the criteria of comparative reality in the bygone order of succession. If we remember the facts of sequence at all, it is only to note that the earlier did not contain the later, but on the contrary, borrows its whole character and value from what in fact was yet unreal in Time when it—the earlier—was already real. Any analysis of the part played by Time in the logical judgment, of which the above-mentioned stages of causation are indeed merely a case, is sufficient to illustrate the evanescence of Time in all the higher intellectual processes.

But it may be asked what we can expect to show by considerations of this kind. Assume, for the sake of argument, that we could show ourselves to be approaching a state of experience in which succession would have ceased, or would be wholly, as it is now partially, reversible at pleasure. This would not remove the fundamental fact that by the hypothesis we should be no more than approaching the condition in question, and the affirmation of some kind of future condition does not seem a possible road to cancelling the reality of Time. It might be urged, indeed, in reply, that—again by the hypothesis—the attainment of such a standpoint would of itself show the past, which as a past would then have become inconceivable, to have been an illusion, or more than that, would wipe it out of existence even as an illusion. In the latter case, of course, the problem would disappear with the experience which caused it: but the application of so violent an hypothesis would tend to present our

world as emptied of all its content, along with all its problems. If no partial standpoints are to survive within the whole of experience, then there certainly could be no difficulty, but it would be questionable whether there could be anything.

The former hypothetical case, though incapable of being realised in experience, seems to share the essence of our actual position, and to set the problem which our theory would have to deal with if it professed to be able to do so. On this hypothesis the illusion, although explained, would not be explained away. It would then be, to use the phraseology of Mr. Bradley, whose argument to a great extent I am merely expanding, an appearance. It would be there, and meet us in experience, like the sun's apparent diurnal motion, although we should see behind it. And we should not be able to say that temporal experience did not exist, or had never existed; but only that it was a mere appearance, and that we could see the reason of it, and how and why it was false, and how it was transcended.

No problem, then, would be solved by saying that a timeless experience might come into being in Time, not having been before. That, by itself, would be to accept the reality of the Time-process and to limit the Absolute by it. To look to the cessation of the Time experience in the future as in itself a reconciliation of the difficulties presented by Time is a fundamental contradiction. It is placing eternity outside and *after* Time, as the popular imagination has often attempted to do. The only clue to a solution which would be afforded by such an experience would be in the light thrown by the supposed new insight on the nature of the Absolute and of its relation to the Time-succession. It would not be that the Absolute had come into being after Time, but that in the temporal succession it had more or less completely manifested itself, and something as to a deeper reality might be inferred from this manifestation. But for this we require, not the annihilation of temporal experience, but the power of seeing through it.

And even to our way of knowledge and feeling, separated by a wide gulf from the hypothetical case in which Time would be transcended, some such analysis seems to be provoked by the peculiar nature of the phenomena. Time comes into being along with its opposite, viz., the unity of what appears discrete in Time. Up to a certain point the two seem to grow together, but at that point—the point where genuine causal or evolutionary unity is explicitly insisted on—we become aware that the half-scientific Time-consciousness has immensely departed from anything warranted by our experience of succession, has extended itself chiefly into the past, which it has projected in a form quite inadequate to causal unity and systematic reality, and is, so far as the main portion of our experience goes,

reversible at pleasure. The standard of hypostasised equable duration suffices as a first arrangement of occurrences, and no more. What we cannot be rid of is the personal momentary transition from present to present as new sense-perceptions arrive. This is incident to our way of existing, and we cannot transcend it. But we cannot shut our eyes to the concomitant variations of its importance relatively to the perfection of our experience.

2. As regards the second part of my subject, I propose nothing more than to claim attention for the antithesis involved. There have been recent indications of a tendency which in my judgment rests on a confusion of its sides. In bringing the question of Time, as involving change and imperfection, to its climax in the question of evil, it has been asked, as I understand, whether a perfect whole can have imperfect parts. I am not sure whether the self-consciousness of the parts as finite souls is held to make a difference of principle. I cannot see that it makes any. The question then is, whether the imperfection of parts as parts, is incompatible with the perfection of the whole. Perhaps, if we press it hard, the phrase "parts as parts" will prove equivocal. Part implies whole, and a part fully grasped as a part, it may be urged, must be seen under the species of the whole; that is, no longer as a mere part, but as having a perfection inseparable from the perfection of the whole. On the other hand, a part given as a part, in a whole which as such is incompletely known, is compatible with, or even implies, obscurity and confusion in its relation to the whole. And it is this, the part as given, with which we are dealing. Perhaps the above equivocation has affected the discussion of the question. It is a truism to say that if a part remains imperfect when seen under the species of the whole, then the whole is itself imperfect, or in other words fails to be truly a whole. But in dealing with a part as given in a whole which is not given, the presumption is the other way. The part would not be of the nature of a part in a truly concrete whole—it would not possess the substance and individuality which belong to the member of any such complex—unless, taken in relative isolation, it presented, so to speak, a harsh and jagged contour and an appearance of unresolvable ultimateness in this contour. This is what we are startled by, in minor instances, every day of our lives; and I must insist that daily experience, often as it is cited, is as a rule most crudely and coarsely analysed when applied in philosophical problems. The hardness and ultimate given-ness of fragmentary appearances, and the miraculous alchemy with which the touch of thought and progressive experience is perpetually dissolving them, are fundamental facts of practical and theoretical life, which none but the very greatest philosophers seem to have adequately appreciated. I may instance, in work which in

my judgment is in general of very great value, Mr. Ellis McTaggart's constant use of the term delusion, to represent the imperfection of an appearance within experience, and his insistence on the difficulty presented by a sense of imperfection—pain, evil, thwarting—on the part of the individual mind. Neither of these facts appears to me to carry the importance or the character which he finds in them. An appearance is not a delusion, it is the form of reality, and the beaten track of experience. Our life is made up of appearances, in process of resolution; they become delusions only when persisted in against experience which to a normal mind suffices to resolve them. The individual's sense of imperfection is no harder a datum than many which we transfigure into a higher unity from year to year and from decade to decade; it has no fixedness or finality, and we can often see quite clearly that the sense of shortcoming within a given mind, fact though it is, is also an appearance of a kind which can at least relatively be transcended. Knowing that it may accompany the most complete achievement, of which it is often merely a reaction on certain feelings, and that this reaction itself can be absorbed into the sense of achievement as a characteristic element of it, we see that we can never tell how far this really happens for the individual, much less how far the self-containedness of the individual, involving the separation of his subjective suffering from his objective self-realisedness, is a mere appearance.

I apply these ideas, then, admitting that the application is very modest and limited—an endeavour to remove needless prejudices rather than to solve ultimate problems—to the antithesis between Time in the Absolute and the Absolute in Time. The real question seems to me to be whether we are in earnest with the relation of part and whole. If we are going to say that the part as given qualifies without reservation the whole which is not given, then the knot is cut, and by admitting Time to be given, we admit that the Absolute is in Time. But if we make any attempt to face the daily facts of experience, such a conclusion seems to become merely fantastic and unrelated to the real world. Within our experience there is no limit to the transformation which a given part may undergo by being seen in connection with a whole which was not given along with it. And unless this is the case the conception of part and whole is destroyed. A whole which made no difference to the part would no more be a whole, than a part which made no difference to the whole would be a part. The general tendency of our experience, then, together with indications particularly concerning the reality of temporal succession, suggest that but little more inference lies from the given-ness of Time in the Absolute to the Absolute being in Time, than from the given-ness of colour in the Absolute to the Absolute having a colour.

WHAT IS MEANT BY THE *A PRIORI* ELEMENT IN KNOWLEDGE?

By E. C. BENECKE.

WHEN we speak of "the *a priori* element in knowledge" we may be confronted, amongst others, by the following opposite questions: "Is there in knowledge any such thing as an *a priori* element?" and "Is there anything in knowledge which is not *a priori*?"

Now if these two questions can both be asked, and answered in the negative, by the same individual, or at least by those who hold substantially the same views—and we shall find that this is quite possible—they must clearly be asked in respect of different meanings of the term "*a priori*," and it therefore behoves us at the outset of any inquiry into this subject to consider the meanings of that term, and to decide in which of them we intend ourselves to use it.

Mr. Bosanquet quotes Albertus de Saxonia (A.D. 1390) as "the oldest authority for the dualistic use of *a priori*"*; and according to him "*a priori*" means "proceeding from causes to effects."†

Mr. Bosanquet himself says (*l. c.*): "*A priori*' (ἐκ προτέρων) says in so many words that the knowledge to which this term applies is from something prior to it," and he adds that "this, he presumes, is the only meaning which the phrase *a priori* can ever have had," and that the differentia imposed by the term upon all that claims to be known "*a priori*" is, "that it shall be *inferred from knowledge*, whatever this may be, *other than itself*."

These two meanings are clearly not the same. In making it turn on whether the inference is from causes to effects or from effects to causes, the distinction which Albertus de Saxonia had in his mind was, I presume, not indeed that of priority and subsequence in time, but that of priority and posteriority in Aristotle's sense (πρότερον τῇ φύσει); but this does not enter into Mr. Bosanquet's conception. According to him knowledge is *a priori* if it is inferred "from knowledge other than" the conclusion itself, so that the

* In a note on vol. ii, p. 222, of his *Logic*. Mr. Bosanquet tells us that the quotation is taken from Prantl, *Gesch. der Logik*, vol. iv, p. 78.

† The quotation is as follows: "Demonstratio est quædam procedens ex causis ad effectum, et vocatur demonstratio *a priori* et demonstratio propter quid et potissima; . . . alia est demonstratio procedens ab effectibus ad causas, et talis vocatur demonstratio *a posteriori*, et demonstr. quia (*i.e.*, that) et demonstr. non potissima."

priority in his case would mean only that the premiss must be *known* before, or not later than, the conclusion.*

But although these interpretations thus differ, they agree in this, that they both insist that if knowledge is to be *a priori*, it must be *mediate*, it must have been inferred from something else. Etymologically no doubt this is quite correct, and it has the advantage of giving an intelligible explanation of the phrase "*a priori*," which is otherwise somewhat puzzling. But even if we admit that the whole of the knowledge we possess is inferential, I venture to doubt whether it is precisely this aspect of it to which the man ordinarily wishes to draw attention who speaks of its having an *a priori* element. On the contrary, I believe that, now-a-days, the term "*a priori*" is by most persons taken to be applicable only to that which is not only not due to direct experience, but is known apart from the necessity of any other specific knowledge whatever.† This, which, to distinguish it from the other, in which it is taken to signify the distinctively mediate, I will call the *second meaning* of the term, is the direct contrary of the meaning as defined by Mr. Bosanquet; and it is obvious that if one disputant understands the term in the former sense and the other in the latter, they cannot agree in words unless they altogether differ as regards the matter.

According to Sir Wm. Hamilton‡ the change was made by Kant, the terms "*a priori*" and "*a posteriori*" having until his time been "properly and usually" employed in the senses given by Albertus de Saxonia. Kant himself does not suggest that he was conscious of introducing any innovation in distinguishing the *a priori* from the *a posteriori* as that which is from that which is not, independent of experience,§ though he certainly does appear to have been aware

* Apparently this would be the case in all true inference, and if this by itself constitutes *a priori* inference, one does not quite see what inferences can be *a posteriori*.

† Thus Archbishop Thomson, for example, says: "The distinction between truths *a priori* and truths *a posteriori*, as observed universally by modern writers, may be drawn as follows. If there are any truths which the mind possesses, whether consciously or unconsciously, before and independent of experience, they may be termed *a priori* truths, as belonging to it prior to all that it acquires from the world around. On the other hand," &c. (*Laws of Thought*, 2nd ed., pp. 68, 69.)

‡ *Reid's Works*, p. 762. Cf. Trendelenburg, *Elem. Log. Arist.*, p. 88 (note to § 19), who, however, points out that traces of this usage may be found in Hume.

§ Thus in the 2nd ed. of the *Crit. of P. R.* (p. 2) he says: "*Man nennt solche Erkenntnisse [i.e., solche, die von der Erfahrung und selbst von allen Eindrücken der Sinne unabhängig sind], Erkenntnisse a priori und unterscheidet sie von den empirischen, die ihre Quellen a posteriori, nämlich in der Erfahrung, haben.*" This would surely imply that this was the usual meaning of the terms in his day.

that he was going somewhat beyond what was customary in opposing the *a priori* so completely to everything empirical as he does in the *Critique of Pure Reason*. Thus in the Introduction to the 2nd edition of that work, § 1, after pointing out that the simple distinction between empirical and not-empirical is not sufficiently precise for his purpose, he says: "By knowledge *a priori* we shall in the sequel understand, not such as is independent of this or that kind of experience, but such as is absolutely independent of all experience." But whether or not he was the first to introduce it, it is no doubt to a great extent to the influence of Kant that the modern use of the term in the second sense given above is due; and he himself clearly uses it in that sense, for, since, as he so emphatically teaches, there is no knowledge whatever apart from experience, there is clearly no prior knowledge other than itself from which this *a priori* element, which is to owe nothing whatever to any kind of experience, could be inferred.

The second is, then, if I am not altogether mistaken, the sense in which, or in some approach to which, the term *a priori* is now usually understood; and if we so take it, it is clearly a question of great importance both to psychology and to philosophy whether there is any such *a priori* element in knowledge or not. And to revert to the two opposite questions with a reference to which the present paper opens, it is also clear that if anybody comes to the conclusion that there is in knowledge no such thing as an *a priori* element in Kant's sense, he will have also to conclude that there is in knowledge nothing which is *not a priori* in the sense of Mr. Bosanquet.

We must, therefore, be very careful as to the sense in which we employ the term and must make up our minds, when we speak of the *a priori* element in knowledge, whether we mean this in the first sense or in the second, or whether perhaps there is a third sense in which we must understand it if the conception is to be fruitful in results to us.

If, to begin with, we take the term in Kant's sense, the question "Is there an *a priori* element in knowledge?" therefore amounts to this: Is there in knowledge any element which is completely independent, not only of this or that kind of experience, but of experience of any kind whatever?

I need hardly say that I have no intention of attempting to answer that question. I have no intention of entering, particularly within the limits of one short paper, upon what Archbishop

In the 1st ed. also he uses the words "man nennt," and "wie man sich ausdrückt," &c., thus implying that the usage was not only his own.

Thomson called "the great *campus philosophorum*, the great controverted question of mental philosophy,"* and of adjudicating between the great philosophers who have differed on this subject. What I have in view at present is something very much less ambitious, viz., to endeavour to determine for myself what the question really means, and to consider whether the above is the most desirable form in which it can be put. Is it desirable that we should, with Kant, *ab initio* so completely oppose the term *a priori* to the experiential as not to be able to apply it in strict propriety to any element of knowledge which owes anything whatever to experience of any kind?†

To put the matter in a slightly different form: what I want to consider is this:—What shall we mean if we say that the acquisition of knowledge involves the combination of a *a priori* elements with a *posteriori* elements? and do we place ourselves in the most favourable position for considering the nature of the process of the acquisition of knowledge if, with Kant, we oppose the *a priori* element, as that which is entirely unbeholden to any kind of experience, to the *a posteriori* element, as comprising all and everything which owes anything to experience, or to the results of experience? or shall we do better to draw the line rather differently? And if the latter, how ought we to draw it?

We shall, I think, come most directly to the point if we consider, however superficially, some simple case of the acquisition of knowledge; and I must ask your indulgence if in doing so I call your attention to some points both very familiar and obvious in themselves.

Suppose, then, that I am informed, having previously been ignorant of the fact, that Lord Rayleigh and Professor Ramsay have discovered and proved the presence in the atmosphere of a gas hitherto unknown. If I believe my informant, I have now acquired

* *Laws of Thought*, 2nd ed., p. 69.

† I should like to be allowed to add that I do not mean to suggest that Kant himself always uses the term in this violently anti-empirical sense, and that, in particular, I am not ignorant of the distinction he drew between *pure* and *impure a priori* judgments, the former (*reine Erkenntnisse a priori*) alone being quite free from all empirical admixture. This, however, does not really alter the matter, for the impurity is a mere admixture of the *a posteriori* element, and so far as it is impure, the impure *a priori* is not a *a priori* at all. In fact, as already suggested (p. 13), to speak, as Kant does, of *knowledge* as strictly *a priori* ("eine reine Erkenntniss a priori," or "eine Erkenntniss schlechterdings a priori") would appear to be really inconsistent with his own principles. Cf. Caird, *The Critical Philos. of Imm. Kant*, vol. i, pp. 20, 21; also Lewes, *Probl. of Life and Mind*, Probl. I, § 209 sq.

a new piece of knowledge; but what that knowledge is, will obviously depend to a very great extent on what I knew before. If I know anything of chemistry and physics it will obviously be knowledge of a very different kind from that which will have been conveyed to me if I know nothing whatever of those sciences: and the more intimate my knowledge of natural science is, the greater and the more accurate will be the addition made to it by the information given. And not only this, but the greater will be my desire for further and more detailed information on the subject. If I am absolutely ignorant of science, I shall probably be satisfied with—or perhaps made uncomfortable by—the vague notion that there is something new in the air, and if I ask anything about it, it will probably be merely whether it is likely to bring any new kind of influenza or other similar plague in its train. If I do know anything of science, I shall be curious to know some of the properties of the newly-discovered gas, how it was discovered, how much of it there is in the air, how it came so long to escape detection, &c., &c.; and the greater my scientific knowledge is, the greater will be my desire for such further information, the fuller and the more accurate will be the details demanded. In fact, it is obvious that the effect of any new piece of information on our minds, and our capacity for making use of it and for acquiring more, is conditioned by the amount of knowledge we already possess on the same or kindred subjects and by the general state of our minds towards it. Every piece of information offered must, if it is to be intelligently received—if it is really to become a part of our knowledge—be fitted into a system of knowledge and beliefs already formed. And it is not only that the seed thus sown will live and can possibly germinate only if it finds the ground suitable and prepared for its reception: it is not only that if it finds us wholly unprepared for it it will simply disappear and will leave the mind as if it had never been communicated, and that if it conflicts either with our general system of thought and beliefs, or with any particular beliefs consciously and strongly held, it will be violently rejected and altogether disbelieved, or, if it is a matter of sufficient importance and backed by an authority of sufficient weight with us, will enter into a struggle with the already existing incompatible beliefs which may end either in the defeat and exclusion of one or other of the conflicting sets of beliefs or in the discovery of some *modus vivendi* between them and the retention of both with mutual concessions:—it is, I say, not only all this, important as this clearly is for the result, but that, as already observed, the new knowledge is itself different according as it is received by one mind or by another. The communication of a piece of knowledge is not like the handing over by one person to another of a solid object which the second either receives

or rejects but which, if he receives it, is the same in his hands as it was in those of the giver. It is rather the communication of an impulse and the handing over of materials, out of which, and of the materials he already possesses, the receiver has to put together the best object he can. If the mind of the receiver is in a condition to work in the same way and along lines similar to those of the mind of the giver and if the material he already possessed is similar, the object produced will probably also be more or less similar, though, of course, it may be very much more or very much less perfect. In so far as these conditions do not obtain, the resulting object will probably be different, and if an object (*i.e.*, a belief or piece of knowledge) is formed at all, it may, of course, differ *in toto*. Amongst persons living in the same society, and consequently in the same state of civilisation, in the same social air, the conditions are for the most part such, that the probability is in favour of the results arrived at when the same communication is made to different persons being more or less similar, particularly if they belong to the same social scale and have received about the same education.

I need not point out that it is the practical agreement resulting from this which renders social intercourse and the communication of ideas possible. Nor need I stop to show that, though I have spoken only of the communication of information by others, it is not to this only that the above applies. It applies no less to what we infer or discover for ourselves. That one man makes a discovery, and another, under apparently the same circumstances, does not, depends not only on the superior natural abilities of the former, but also on his knowledge and his previous training. We obviously cannot understand the historical account of a discovery in science unless we are told what was the state of general scientific knowledge at the time and the manner in which men of science would at that time be generally disposed to regard the kind of phenomenon in question. Indeed, we cannot completely understand it unless—and this is, of course, an impossible condition—a true picture is given to us of the state of the discoverer's own mind just before making the discovery and of all the knowledge in any way relating to that subject, or to the means by which he was led to his discovery, that he possessed.

I have brought forward these familiar matters in order to emphasize the obvious and familiar fact that in all cases of the acquisition of fresh knowledge one at least of the conditions on which the result depends is *the knowledge we possessed before* the fresh information was acquired and our state of mind with regard to it. I shall ask to be allowed for the present to call this state of the mind before the new information is acquired together with the whole of its contents, so far as these at all relate to the matter in hand, the PRIUS.

The corresponding state and contents after the acquisition will then naturally be called the *POSTERIUS*.

Suppose, now, that some new question is proposed or suggests itself to us—something which we have not considered before, *e.g.*, “Perhaps A is B; is it so?” The most obvious and natural manner of trying to answer this question is to consider what we already know of A and B. If among what we know of the properties or attributes of A we find any “mark” (in Mill’s sense) either of B or of Not-B, our question is answered; and since the knowledge thus arrived at is derived directly from what we have just called *the prius*, we might, if the term were not already engaged, fitly call our inference, or knowledge, *a priori*. As it is, however, this would be a third meaning of that term, and in order to avoid the confusion which this might cause I will rather call it *prioric*.

If, on the other hand, we do not find any such mark, the next most obvious course is to go and examine A, to see whether it is B or not. If on a subsequent occasion we make use of the knowledge thus obtained, we are clearly appealing to what we have just called *the posterius*, and we might, therefore, similarly have called this knowledge *a posteriori*, also in a third sense; for the same reason, however, I will rather call it *posterioric*.

It will, perhaps, have been noticed that the meaning of my word *prioric* appears to approach very closely to that of the term *a priori* as defined by Mr. Bosanquet, since the prioric conclusion “A is B” was certainly “inferred from knowledge other than itself.” I shall have to speak directly of its relation to the various meanings of the term, but I may say in passing here that I cannot accept this as the differentia of the prioric, because (if for no other reason), according to this every inference would be prioric, and I must leave room for the possibility of posterioric inference also. To the posterioric side would appear to belong induction and generalisation from experience generally, into the consideration of which I cannot enter on the present occasion.

If instead of “prioric” and “posterioric” we had, as suggested, said “*a priori*” and “*a posteriori*” in a third sense, then, apart from the general objection to the use of familiar terms in unfamiliar senses, the first objection that would be likely to be made to what precedes is, that in this third sense of the terms the difference between *a priori* and *a posteriori* knowledge would have appeared to be a quite unessential one. Whether, or not, before I discovered that “A is B,” I happened to know of any properties of A which are “marks” of B, may be a matter of mere accident which cannot in any way affect the relation between A and B; but according to the account just given, in the first case my knowledge that “A is B”

may be *a priori* (in the third sense), in the latter it can be only *a posteriori*. Now, by Kant, certainly, and, I presume, by most of those who make much use of the expression, the distinction is not regarded as at all accidental, but as something very fundamental indeed. According to Kant (*Crit. of P. R.*, Intro., II, 2nd ed.) all *a priori* knowledge is, and all *a posteriori* knowledge is not, *necessary* knowledge, *i.e.*, knowledge of necessary truth (not only that "A is B" but that "A is necessarily B"). According to him the criterion of the *a priori* is necessity.* I shall therefore be obliged to venture a short way on the treacherous ice of Necessity; but I will go no further than is absolutely necessary for my present purpose, which is happily not far, and will first a little further consider the relation of the *priori* and the *posteriori* to knowledge.

It is obvious, then, to begin with, that no piece of knowledge which we acquire at any time, except perhaps in early infancy,† can be wholly *posteriori* in the sense of having nothing to do with anything *priori*; for, as we have already seen, our previous knowledge always enters into and modifies the result, forming a *priori* element. The only possible exception would appear to be immediate knowledge that at the present moment I have a particular sensation or thought; but so soon as I mentally classify this as a thought, or a sensation of cold, or whatever it may be, even this involves a *priori* element, for it is only by means of my *prius* that I know that it is such or such. On the other hand, we may acquire knowledge wholly *priorically*, *viz.*, when our *prius* contains the whole of the premisses necessary for deducing it; but we must be careful to observe that this does *not* mean that the result contains no elements that were *posteriorically* obtained. On the contrary, since we must hold that our actual knowledge begins with experience, even if we believe, with Kant, that a portion of it is derived from another source or sources, and since our experience, in one form or another, plays so large a part in our mental life that that portion of our knowledge which owes nothing whatever to it must, if it exists at all, certainly form only an extremely small portion of the whole, the probability is, to say the least of it, very much the other way.

If, to avoid the needless multiplication of classes, we count the

* Kant (*l.c.*) gives also another criterion, *viz.*, strict *universality*. If we know *a priori* that "every A is B," we know absolutely that *every* A is, always has been, and always will be B, and that to this there can be no exception. *A posteriori*, on the other hand, we can at the most know only that no A has yet been discovered that is not B. This, however, as he points out, is only the criterion of necessity over again, and I do not, therefore refer to it in the text.

† What takes place in early infancy must be so wholly conjectural that an apology is hardly needed for leaving it unconsidered.

results of direct experience (as when I examine A and find it to be B) as belonging to the *posterioric* class, and if we also put information given to us by others into the same class, since it is not derived from our own *prius*, however large the *prioric* element which enters into our result, but comes to us from the *posterius* of our informant* though not from our own, we appear, then, to have arrived at this position :

Knowledge which we acquire at any time, except, perhaps, in early infancy, may be either *prioric* or *posterioric* : but in the latter case it will certainly contain *prioric* elements, and in the former it will most probably, if not certainly, contain elements which have been arrived at *posteriorically*.

If this is a true account of the matter it is obvious that the *prioric* and the *posterioric* elements must become inextricably mixed, and that if we apply the terms *prioric* and *posterioric* to knowledge at all it can, for the most part,† be only in respect of the manner in which the particular piece of knowledge so qualified happens to have been obtained, and cannot in any way refer to the nature of the knowledge itself. Every piece of knowledge which we acquire, whether in the one way or in the other, so far as it is retained at all, enters into the general body of our knowledge and thus forms part of our *prius* on the occasion of every future acquisition. If, then, we deduce proposition C from propositions A and B, which have been previously arrived at *posteriorically*, we should if, as at first suggested, we had used the terms *a priori* and *a posteriori*, instead of *prioric* and *posterioric*, have had to say that our knowledge of C is *a priori*, though it is derived from premises both of which were *a posteriori*. This would appear to be a result utterly at variance not only with the teaching of Kant, but also with common usage, and to show that the “*prioric*” can have nothing to do with the “*a priori*,” in its second sense at least.‡ I must ask

* He is, of course, supposed to possess the information before he passes it on to us, however he may himself have acquired it.

† I say “for the most part,” because if there really is any knowledge which is wholly *a priori*, without the admixture of any *a posteriori* element whatever, what I here say does not apply to it. Whether there is any such, I do not here enquire.

‡ It is, of course, not inconsistent with Mr. Bosanquet’s definition ; nor, indeed, would it appear to be so with the account of *a priori* given by Wolff in the following passage (*Logica*, § 663) : “Utimur in veritate proprio Marte eruenda vel solo sensu—vel ex aliis cognitis rationando elicimus nondum cognita. In priori casu dicimur veritatem eruere *a posteriori*, in posteriori *a priori*,” since he adds that the “*alia cognita*” may (indeed, must, to some extent) be due to experience. Ueberweg, to whom I owe the quotation, says (*Log.*, p. 222) that Wolff’s language

you, however, to look a little further with me before deciding that it really is so.

When we consider that we are constantly acquiring new information of one kind or another, and that every permanent acquisition forms part of our prius in subsequent cases, it seems at first sight as if our knowledge—the successive priors in the course of our life—must resemble a cone, beginning at the apex and growing ever larger, swallowing up ever more of what there was to be known, and that we must therefore become more and more able to rely on prioric inference and less and less obliged to have recourse to fresh experience.

“When I was a freshman, old age did appear
A beauteous and reverend thing;
For knowledge must gather as year follows year,
And wisdom from knowledge should spring.”

To some extent no doubt this is so. We do acquire available experience, and are able to rely on it as we could not when we were children. As we all know, however, this does not go on precisely as our cone theory would lead us to expect; for not only do we, with Spedding—

“Find the same years which supplied us with knowledge
Take the power to digest it away,
And let out all the store we had gathered at college
Through chinks, which increase every day,”

but the knowledge we acquire as we go on will not always leave that which we fancied we possessed before alone. It is often at variance with this, that, or the other part of it, and conflicts arise from which the body of knowledge we possess—the prius for the next inference on the same subject—may emerge, not so much increased as modified, altered, more or less different from what it was before.

It is obvious that, unless we are to be thrown completely off our balance, such modification must be kept within certain limits. Any sudden and radical alteration of the general system of thought and of beliefs which we have gradually built up for ourselves would upset us completely and would prevent our continuing the building process, either priorically or posteriorically, for a long time if not for ever, and anything which would bring this on we are consequently bound to resist to the utmost.

here is “sehr ungenau”; and I presume that what he here meant by a *priori* is what is inferred by reasoning from the *universal* part of the prius. See below, p. 22.

Now, as everybody knows, one of the main foundations on which the whole of our thought is built is the *Law of Contradiction*. If this were shaken, the whole fabric would come to the ground. We cannot even conceive the possibility of such a thing. It is for us wholly impossible. Consequently, if it is one of our beliefs—a part of our prius—that “A is B,” and an apparently good case is now made out for “A is *not* B,” and if these two both claim belief at the same time,* one of them must give way.

Now, the positions held in our prius by different beliefs are very various. Some lie near the surface, and may be given up, if necessary, with very little disturbance of the rest; others would carry with them pieces of the structure, more or less considerable; while, again, others are so near to the foundations that the consequences of their upheaval would be, if not quite, nearly as disastrous as that of the Law of Contradiction itself. The resistance which such beliefs offer to a contradictory intruder is, of course, in proportion. Though there is always an advantage in possession, yet against a mere surface belief the now comer may have a pretty equal fight; but if it attacks one that lies deeper, it will be resisted, not only by the belief itself, but also by the body of those that lie on it and of those by which it is held and which it would carry with it if dislodged, as well as by the general inertia of the whole mind—its unwillingness to have its system of beliefs interfered with; and, lastly, if the belief attacked is one of those that lie near the foundations, the assailant may be as summarily ejected as if it had attacked the Law of Contradiction itself. Such foundation-beliefs are *necessary* for the stability, perhaps for the very existence, of the whole building. Anything which contradicts them is *impossible*.

It is obvious, again, that beliefs on which a large part of our knowledge rests must occupy a position in our prius secured by long established usage.† If a belief could not be disturbed without upsetting our general principles of thought or our belief in the constitution of things in general, the probability, to say the least of it,

* *I.e.*, if they are both before the consciousness as things to be believed at the same time.

† The belief in its present form, indeed, may have been formulated but comparatively recently; but it will at least be seen to be indissolubly connected with beliefs of long standing, which we cannot conceive our minds ever to have been without. Hence it may come about that even a law which has only just been discovered, and the establishment of which was a great achievement of genius, may, when we have made the conditions really clear to ourselves, appear self-evident. *Cf.* Mr. Bosanquet's remarks (*Logic*, vol. ii, pp. 224 *sq.*) on Dr. Whewell and the law of definite combining proportions, and consider such principles as the Conservation of Energy, &c.

is very great that not only has that belief held a position in our prius for a very long time, but that we cannot even conceive ourselves ever to have been without it.*

It will now be very clear what I am coming to. Such beliefs as those last spoken of are not only *necessary*—they are necessary to the stability of our system, and their contradictory is, therefore, impossible—but they appear also always to have been in our prius. Consequently all that can be logically deduced from such beliefs only is also *necessary* and has also been deduced from the prius. This portion, therefore, of our *prioric* inferences possesses Kant's criterion of the *a priori* (see above, p. 18); and, conversely, every belief which has this criterion and is, therefore, according to Kant *a priori*, is by the same reasoning *prioric*.

The extension of our term "*prioric*," therefore, *includes* the whole of that of Kant's "*a priori*" (since every piece of pure *a priori* knowledge, in his sense of the term, must either have been always in our prius, or must be derived from knowledge that has always been there); and, on the other hand, with the exception of that certainly comparatively small part of our knowledge (if there is any such at all) which formed part of the original furniture of the mind and was, therefore, neither derived from experience nor inferred from anything else, it *is included* in the extension of the term as defined by Mr. Bosanquet (cf. above, p. 17). The term "*prioric*," therefore forms, as it were, a bridge by which these two apparently opposite meanings of the term "*a priori*" are connected; and if, as at first suggested, we had called it also "*a priori*," although we should have introduced a third meaning of that term, it would not have been so far removed from the established meanings as it at first appeared.

The use of the conceptions of the *prius* and of the *prioric* in the consideration of the *a priori* element in knowledge appears then to be, to some extent at least, justified.

Now, the prius of any particular piece of knowledge, "*A is B*," contains, besides knowledge of particular facts:—

1. Knowledge of established *universal* propositions; such knowledge as that—"Every event has a cause," "every man is mortal," "the sodium spectrum always contains such and such lines," &c.

These universal propositions comprise:—

2. Some *necessary* propositions, viz., the whole of what we knew

* Of course I do not mean that it must have been formulated (cf. the preceding note). There are comparatively few who formulate for themselves even the Law of Contradiction; but there is, I presume, no one who does not use it all his life as part of his prius.

as necessary truth at the time we learnt that "A is B." These necessary propositions, again, comprise—

3. All our *original* knowledge—the whole of what Kant calls "*a priori*"—if any such exists.

We shall not, I believe, be offending against custom if we call that "*a priori* knowledge" (or that "the *a priori* element in knowledge") which is derived solely from either of the above portions—the universal, the necessary, or the original—of our *prioric* knowledge,* and the first part of the question asked on p. 14, viz., What shall we mean if we say that the acquisition of knowledge involves *a priori* elements? is thus clearly answered. Whether we mean "Does it involve elements from the universal part of the prius?" or "Does it involve elements from its necessary part?" or "Does it involve elements from its original part?" in either case we are asking a clear and intelligible question.† But these three questions are obviously very different, and it is certainly absolutely necessary that we should determine in any particular case *which of them* we are asking.

As regards the second part of our question (p. 14) "Is it desirable that we should, with Kant, *ab initio* so completely oppose the term *a priori* to the experiential as not to be able to apply it in strict propriety to any element of knowledge which owes anything whatever to experience of any kind?" the answer must, I presume, be that that depends on the object we have in view. Is our study directed primarily to the nature of things and of the perceiving and conceiving mind, or rather to that of our knowledge as a product and to the processes by which it has come to be what it is?

Throughout the whole of our conscious life there is, as we know, always a *prioric* element in all knowledge. In inquiring into the *a priori* element in knowledge, it may be our object to discover whether this is true, not only of the whole of the life which we can remember, or of which we can form any clear conception, but actually of the whole of our mental life from the very beginning?

* As regards the use of the term "*a priori*" for that which is derived from the *universal* part of the prius, I may observe that it is closely related to the original use of the term (Albertus de Sax., &c.); for I presume there can be no doubt that that use of the term was derived from Aristotle's φύσει (or κατὰ τὸν λόγον) πρότερον (v. Trendelenburg, *Elem. Logic. Ar.*, p. 87; Ueberweg, *Logik*, 5th ed., pp. 221 *sq.*), causes being φύσει πρῶτ, to their effects: but according to Aristotle, τὰ φύσει πρότερα are also τὰ καθόλου. V. *Anal.*, Post I, 2, p. 72 b 37; *Metaph. Δ*, 11, 1, 018 b 32, &c.

† Compare the three meanings assigned to the term "*a priori* knowledge" by Lewes, *Probl. of L. and M.*, *Probl. I*, §§ 213 and 214. It will be observed that his second meaning is not quite identical with mine.

Must there *always* have been a stock of such prioric knowledge lying ready for the first experience to which it could be applied, which knowledge has therefore never been other than prioric? If so, what is the source from which it is derived? and what the nature of its consequent validity? Is it all necessary knowledge? and, conversely, is all necessary knowledge of this nature? Does such necessity in our beliefs imply any corresponding necessity in the things to which the beliefs relate? or, what is the relation of the necessity of the thought to the things? &c., &c. Questions such as these are surely of great importance from the metaphysical as well as the psychological point of view; and there can, I presume, be no doubt that for them the *a priori* is rightly distinguished from the *a posteriori* in the extreme manner in which this is done by Kant.* By being so used as to exclude absolutely everything that is due to experience, the term *a priori* draws a sharp line between the original furniture of the mind and all that may in the course of life have been added to it; and a term which does this is clearly necessary in discussions as to the existence of that of which it may be predicated.

On the other hand, if we are inquiring into the genesis and conditions of knowledge, or into the origin and validity of any particular piece of knowledge, it appears to me that we do better to give to the term *a priori*, if we use it at all, a wider meaning and to take it as denoting, according to circumstances, either that which is derived from any part of the established *universal* part of the prius, or that which is derived from its *necessary* part, irrespective of whether this is original and *a priori* in Kant's sense or not.

For the theory of the genesis of knowledge, and of any particular knowledge, the importance of the term appears to me to lie, on the one hand, in the distinction between the universal knowledge previously possessed and the knowledge of particular facts by which such universal knowledge had to be supplemented for the acquisition of the knowledge in question; and, on the other hand, in that between such universal knowledge as has the complete guarantee of necessity and that whose validity may be called in question, and which may, therefore, possibly require to be re-examined. Beside these, the distinction between such necessary knowledge (if any) as is original and independent of experience, and such as owes its "necessity" to the position it now holds in our general system of

* But, as already observed, it is done by him more in his definition at the opening of the *Crit. of P. R.* than in his practice. In practice he usually adds the word "rein" ("pure") ("*reine Erkenntnisse a priori*," &c.) when he wishes to draw the sharp line.

knowledge and beliefs, appears to me to sink into insignificance, and we shall do better to give the name "*a priori*," if that is to be the term we use, either to our *necessary* knowledge and what is derived solely from it, or to that which is deduced only from universal premisses, according as it is the one distinction or the other that has the most importance to us for the matter in hand.

If the above is correct it is, no doubt, unfortunate that the term *a priori* should have these different meanings. I think, myself, that it would have been better if it had always been so used and defined as to denote what is derived from any universal part of the prius,* the necessary being distinguished from it by the use of the word "necessary."† Following Kant's authority and example, usage has, however, I believe, gone the other way, and it is, if I am not much mistaken, precisely of the necessary, as distinguished from the merely universal, that the term *a priori* is now most used. As the various meanings exist we must make the best of them and must, above all things, not allow them to lead us astray.

ANSELM'S ONTOLOGICAL ARGUMENT FOR THE EXISTENCE OF GOD.

By C. C. J. WEBB.

THE celebrated argument for the existence of God, on the statement of which the philosophical fame of Anselm chiefly rests, is to be found set forth in the early chapters of his *Proslogion*, or Address to God: the second of two works which between them contain this profound and lucid thinker's doctrine on the most august subject with which the human mind can occupy itself. It is impossible rightly to judge the *Proslogion* apart from the *Monologion*, or Soliloquy, to which it is the sequel, but my present limits compel me to confine myself to the later book.

We are told by Anselm himself (*Proslogion*, Prooemium, Migne, tom. clviii, col. 223-225) how, after writing the long argument of

* This would appear also to be really more in accord with the original meaning of the term than Kant's usage.

† From both we might then have distinguished the "*priori*," as that which is derived from any part of the prius, whether universal or not; and, on the other hand, the *original* knowledge, and what follows from it alone (Kant's *a priori*), might have been called "*a primo*," as being derived from the first state of the mind—from its possessions prior to the acquisition of any knowledge whatever.

the *Monologion*, he strove to find some one argument sufficient by itself to prove the existence of God, and how, after being long harassed by the search, which distracted him from all other thoughts, one came to him, which he put forth in his *Proslogion*, or *Alloquium*. His previous work had been an *exemplum meditandi de ratione fidei*: this was to be the expression of *fides quaerens intellectum*, faith seeking after understanding. This phrase contains Anselm's conception of the function of theology. It is the attempt to "understand," to make explicit to one's reason that which is implicit in "faith," in the religious experience of one who has been educated in the Christian doctrine, and has lived in the light of it; for such, "understanding" is the half-way house between the *naïveté* of "faith," and that full comprehension which St. Paul calls "sight" (*De Fide Trinitatis*, Praef., Migne, col. 261, see 2 Cor. v, 7).

The following is the argument of the *Proslogion*:—We believe of God, says Anselm (*Prosl.*, c. 2), that he is something *quo nihil majus cogitari possit*. The fool who "says there is no God" (Ps. iii, 1), understands what this means, hence he has something *quo nihil majus cogitari possit* in his understanding, *in intellectu*, though he does not understand that it exists. For *habere in intellectu* and *intelligere esse* differ; the painter who has designed his picture, but has not yet painted it, *habet in intellectu*, that which he is to paint, but *nondum esse intelligit*. But that *quo nihil majus cogitari possit* cannot be *in intellectu* and not *in re*, for in that case some greater *could* be thought, viz., the same thing as actually being, as real. Hence to say that that *quo nihil majus cogitari possit* is *in intellectu* only, is a contradiction; being *in intellectu*, it must also be *in re*. It is a contradiction, he continues (c. 3), to say that *id quo majus cogitari nequit* is not: for that *quod non possit cogitari non esse* can be thought; and that would be greater than *id quo majus cogitari nequit*, if that *were* not, were unreal: and so *id quo majus cogitari nequit* would not be that *id quo majus cogitari nequit*. Now it is God, than which a greater cannot be thought: for otherwise the creature would be able to ascend above its Creator by thinking a better than he, which is absurd; and so, although everything beside God can be thought not to be, God cannot be thought not to be. The fool, therefore, can only say in his heart, "There is no God," because he *is* a fool.

But how, we may ask (*Proslog.*, c. 4), can he even say it "in his heart"? For to "say in the heart" is to think, and it has been shown that he cannot think it. The answer is that a thing may be thought, or "said in the heart" in two ways: either by thinking of the word which signifies it, or by thinking of the thing signified. In the former of these ways the non-existence of God can be thought: in the latter it cannot. What then (*Proslog.*, c. 5) is that, than

which no greater can be thought? What but *id quod summum omnium existens per seipsum omnia alia fecit de nihilo*? For whatever is not this is less than can be thought. Nor can any good be lacking to the Supreme Good; he must be just, true, blessed, and whatever else it is better to be than not to be. Then, after dwelling on these various perfections of God, and discussing certain difficulties which the attribution of them to him seems to involve, he goes on (*Proslog.*, c. 14): Have we now found what we sought? If we have not, how is God that which we have found him to be? And, if we have, why do we not see God? We have found him and we have not found him. We see him in part, but not as he is (1 St. John iii, 2). The soul sees something of him, and would fain see more; but beyond what she sees of him, she can see nothing but darkness. Not that there is any darkness in God (1 St. John i, 5); the darkness is in the soul; the soul is darkened in itself, dazzled in God; it is limited by its own littleness, and narrowness: overwhelmed by God's greatness and immensity. The fulness of the divine light and truth no creature can comprehend. And so (*Proslog.*, c. 15) God is not only that than which no greater can be thought, but something greater than can be thought. For, as we can think something transcending thought, were God not such he would not be that than which no greater can be thought. Thus (*Proslog.*, c. 16, *cp.* St. Augustine, *In Joann. Tract.*, 23; Malebranche, *Recherche de la Vérité*, iii, 2, c. 6) God dwells in light unapproachable; light which we see not, because it is too bright for us, though whatever we see we see thereby; just as all that we see with the eye of flesh we see by the sun's light, yet cannot look on the sun himself. So it is with God: he is everywhere present, yet we see him not; "we live and move and have our being in him," yet cannot approach him: he is within us, and about us, yet we feel him not. We see (*Proslog.*, c. 17) not his beauty, nor hear his harmony, nor smell his odour, nor taste his savour, nor touch his lightness: yet in an ineffable manner he has in himself these attributes, which he has given to his creatures to have in a sensible manner.

So much of the substance of the *Proslogion* I have thought it desirable to present to you, as necessary to show what Anselm's ontological argument is; but the treatise cannot be justly appreciated unless it be read in its entirety, and in connection with the *Monologion*. The biographer of Anselm, Eadmer, tells us (*Vita Anselmi*, sect. 26, Migne, tom. clviii, col. 63-4) how the wax tablets to which the newly found argument was committed were strangely lost by him to whom they were first entrusted: and when a second copy was made and given to the same brother, the tablets were found mysteriously shattered into fragments on the cell floor, no one owning himself in

fault. A century later, John of Salisbury (*Vita S. Anselmi*, c. 5, Migne, tom. cxcix, col. 1017), in an abridgement of Eadmer's Life, intended (as seems likely) as a *pièce justificative* to be used for Anselm's canonisation, hints that this was done "by the malice of the Ancient Enemy." The argument, however, survived these mishaps, and, committed to a more durable material, became gradually known among theologians, and was at last published, although (and the fact is significant of Anselm's disinterested character) he would not have attached his name to what is certainly his principal work but for the bidding of an ecclesiastical superior, Archbishop Hugh of Lyons, Primate of Gaul, and Papal Legate (*Proslog.*, Prooem.). It did not go long without finding a hostile critic in a certain Gaunilo. This person was a monk of Marmoutier, near Tours. He is said to have been Lord of Martigny, and to have retired to Marmoutier when more than 70 years old (Ravaisson, *Rapports sur les Bibl. de l'Ouest*, App.). We know, however, nothing of his beside the little *Liber pro insipiente*, as it is quaintly called, which he wrote against Anselm in defence of the possibility of the fool's thought that there is no God; but that alone has given him an important place in the history of philosophy. Let us see how Gaunilo assails the argument of Anselm. We are said, he begins (*Lib. pro insip.*, c. 2, Migne, tom. clviii, col. 243), *habere in intellectu* whatever we understand, when mentioned by another. Can we not then be said *habere in intellectu* things false and non-existent when we understand what he says who speaks of them? But perhaps this is a thing such that we cannot say we have it *in cogitatione* in that sense in which we may have in our thoughts what is false or doubtful: and so we are not said *cogitare* or *habere in cogitatione* such an object, but only *intelligere* and *habere in intellectu*, since it is of such a nature that it cannot be *thought* except *intelligendo*, i.e., knowing that it really exists. This is, of course, what Anselm says is the case where God is the object of thought. Here, however, Gaunilo raises three objections. First, if this is so, there is no distinction made, such as Anselm knows in the instance of the painter, between *habere rem in intellectu* and *intelligere rem esse*. Secondly, can we believe, even of such a thing as has been supposed, that its non-existence is really not thinkable? And, if it were, to what purpose is all this reasoning against him who denies or doubts its existence: since, by the hypothesis, this denial or doubt is impossible. Thirdly, the existence of such a thing must be proved to the opponent by an argument; but the only argument alleged, viz., that the conviction of existence follows necessarily from the thought of it, is insufficient: for there are many things of which I understand the statement, and which yet are doubtful or false; and often I am deceived, and believe what

is false, while here I do not even believe what is said. Nor (*Lib. pro insip.*, c. 3) does Anselm's instance of the painter help us. The "having in one's understanding" an object other than the understanding which conceives it is quite different from the painter's conception of his future picture, where the picture is in his mind as a part of his understanding or knowledge. Again (*ibid.*, c. 4) when a thing is spoken of in my hearing, I may understand what is meant *secundum rem vel ex specie mihi vel ex genere notam* (*cp. S. Aug. De Trin.* viii, 9), although I may not know the particular thing, that is, which is mentioned, I may know the kind of thing: but that is not so in the case of God, for Anselm himself admits that there is nothing like him; nor does it mend the matter to substitute for the word "God" the phrase "that than which no greater can be thought." I can think of a man unknown to me when another speaks of him, because I have already a specific or general idea of a man—and yet there may be no such man, if my interlocutor is lying: but I can only think of this Supreme Nature by way of trying to make out the meaning of the words used. As to the argument that "that than which no greater can be thought" must exist *in re*, as well as *in intellectu*, since otherwise there would be a greater than that than which no greater can be thought, this cannot be expected, says Gaunilo (*ibid.*, c. 5), speaking for the Fool, to appeal to me. For I deny that "this than which no greater can be thought" is greater than any real thing: or that I have it *in intellectu*, except in the sense of trying to make out a meaning for its name. The agreement between us which is the necessary basis of the reasoning does not exist. I do not admit that this thing "than which no greater can be thought," which I have (in a sense) in my understanding, *is* greater than all. The *existence* of this thing must be proved to me, before I can be convinced of its *self-existence*. A man might (he goes on, *ibid.*, c. 6) speak to me of the fabulous "Lost Island," which is said to be more excellent in every way than any other place on earth, and then, because I understood what he said, might argue that I must therefore admit the existence of this island; as, otherwise, I should be admitting that some other country was more excellent than any. But I should either suppose a person so arguing to be in jest, or should doubt whether, if I admitted his argument, he or I should be the greater fool, he for using it, or I for admitting it. I know most certainly, continues Gaunilo (*ibid.*, c. 7), that I myself exist, and yet I know that it is possible for me not to exist. I understand also that God exists, and that it is impossible that he should not exist. But it is doubtful whether I can think myself not to exist, so long as I know that I exist; if I can, however, why should I not also be able to think God not to exist, though I

know that he exists? and if I cannot, then the impossibility of thinking the non-existence of a thing is not peculiar to the case of God.

To this attack, which, I hope, in spite of the obvious difficulties of stating in a short compass the substance of a discussion so subtle, and expressed, to some extent, in unfamiliar terminology, I have succeeded in making intelligible to my hearers, Anselm replied by a treatise bearing the title, *Liber Apologeticus contra Respondentem pro Insipiente*. The controversy on both sides is marked by an admirable tone. Gaunilo had accorded the warmest praise to all that followed the main argument in the *Proslogion*. Anselm replies with equal courtesy. Since it is not the fool against whom I wrote that answers me (so he opens his rejoinder), but one who is no fool, and is a Catholic, it may be enough to answer the Catholic. If, says he (*Lib. contra Resp. pro Insip.*, c. 1), that than which no greater can be thought is not thought nor understood, is not in thought or in understanding, then either God is not that than which no greater can be thought, or God is not thought or understood, is not in thought or understanding. But against this he appeals to his opponent's faith and conscience. It is certain that if "that than which no greater can be thought" can be thought to be, then it must be. For it must be eternal without beginning: therefore that than which no greater can be thought, since it is not so capable, cannot both be thought to be, and not to be. Again, no one who denies or doubts that there is something than which no greater can be thought doubts or denies that, if it were, it would be unable not to be, either in thought or fact, as else it would not be that than which no greater can be thought; but whatever can be thought to be, and yet is not, *is* able not to be in thought or in fact. But what is so capable cannot be that than which no greater can be thought. Again, it is possible for whatever is not here or there, now or then, to be nowhere or nowhen: and so all things which consist of parts, even though they be always, like time, or everywhere, like the universe, yet, inasmuch as they are not wholly present in every part, can be thought not to be anywhere, or anywhen. For they are known not to be somewhere or somewhen, and so can be thought not to be anywhere or anywhen, even if they are somewhere or even everywhere, somewhen, or even always. But that than which no greater can be thought, if it *is*, cannot be thought not to be, else it would not be that than which no greater can be thought. It is, therefore, nowise absent in part anywhere or anywhen, but is wholly everywhere and always. Can we say that such a thing cannot be thought or understood, cannot be in thought or understanding, while yet we understand such things

about it? Nor can we deny that it may be understood in a sense, and yet not understood through and through, unless we are also prepared to deny that a man who cannot look on the naked light of the sun cannot see the light of the day, which yet is nothing but sunlight. The contention (*Lib. contra Resp. pro Insp.*, c. 2) that what is not understood (*intelligitur*) is not necessarily *in intellectu*, cannot, Anselm argues, be maintained. The argument remains sound, that whoever should think that that than which no greater can be thought is not really existent, would be thinking it to be its own contradictory, viz., that than which a greater can be thought, i.e., the same thing as actually existing. Hence if that than which no greater can be thought is *in intellectu*, as it is, it must be also *in re*. The example (*ibid.*, c. 3) of the "Lost Island" is not to the point. If Gaunilo can find anything other than that than which no greater can be thought, to which the argument of the *Proslogion* will apply, Anselm promises to give him the "Lost Island," never to be lost again. Whoever thinks that that than which no greater can be thought cannot be thought, either thinks this object, or he does not. If he does not think it, he cannot think that it does not exist; if he thinks it, he thinks that it might have beginning and end: but this is inconsistent with its being that than which no greater can be thought. As to the point raised by Gaunilo, that the impossibility of being thought not to be is not peculiar to God: perhaps Anselm says (*ibid.*, c. 4) we had better use *cogitari* than *intelligi*; and we must distinguish between being able to conceive of a thing not being and at the same time to know that it is (which happens to us in respect of anything that has beginning, end, or parts): and being able to conceive of it not being at the same time as we know it is (which is never possible). Anselm then complains (*ibid.*, c. 5) that Gaunilo allowed himself sometimes to use the expression *maius omnibus* instead of *quo maius cogitari non potest*: he does so in the chapter immediately preceding the instance of the "Lost Island." I, says Anselm, never used this expression: *quo maius cogitari non potest* is quite another thing. One could only prove the necessary existence of that which is greater than all by first showing that that than which no greater can be thought is greater than all; but the existence of that than which no greater can be thought can be shown directly. Still, even of *maius omnibus* we can prove, by means of the other notion, that it necessarily exists: because nothing can be that than which no greater can be thought except it be greater than all, *maius omnibus*. I should, says Anselm, indeed have been the fool that Gaunilo speaks of had I proved the existence of the "Lost Island" from the intelligibility of the description of it: but I did no such

thing. Gaunilo, he continues (*ibid.*, c. 6) contradicts himself in saying now that what is false may be understood, and be in the understanding—*intelligi et in intellectu esse*: and now that what Anselm says he cannot think (*cogitare*), because he cannot conceive of it as really existing. Anselm claims that he himself is not open to such a criticism, for he first proved that that *quo majus cogitari non possit* was *in intellectu* (as Gaunilo admits that even what is false may be), and then went on to show that it could not be *in solo intellectu*, but must be *in re* also. Nor (*ibid.*, c. 7) is there any force in the contention that that than which no greater can be thought may just as easily be thought not to be, as *Deus*, God, itself. For a man must understand *quo majus cogitari nequit* to some extent, whereas *Deus* may mean nothing to him; why then should he deny that which he understands to a certain extent, because there is something else which he does not understand at all? As (*ibid.*, c. 8) to Gaunilo's objection to the illustration of the painter, it was not introduced to show that that *quo majus cogitari nequit* was like the picture in the painter's mind, but only to show that things might be in the understanding, and yet not exist outside of it: and as for the point that there is nothing like the Supreme Good from which to argue to it, every lesser good is like it, in so far as it is good: one can easily see that, if a thing is good which came into being and passes away, it would be still better if it never ended, better still if it neither began nor ended. Can we not thus from that than which a greater can be thought conjecture that than which no greater can be thought? This will refute even the fool who is supposed not to accept the authority of Scripture: the fool's Catholic champion may be reminded of the Apostle's words, "The invisible things of God since the creation of the world are clearly seen, being understood" (*intellecta*) "by the things that are made, even His eternal power and Godhead." (Rom. i, 20.) When (*Lib. contra Resp. pro Insep.*, c. 9), he concludes, we hear speak of that than which no greater can be thought, we can think and understand this, though the thing itself surpasses our powers of thought and understanding. Even he who denies that there is anything to which the expression applies, in denying thinks and understands the notion itself, which forms a part of his negation. One can similarly think and understand the notion of something greater than that which is able not to be. If then when a man thinks that than which no greater can be thought, he thinks something which may not be: then he does *not* think of that than which no greater can be thought: for that which *cannot not be* would be greater, and can be thought: and the same thing cannot be at once thought and not thought. So, whoever thinks of that than which no greater can be thought, does not think of

anything which may not exist, but of something which *cannot not be*; if this *is not*, does not exist, it is not that which he thinks: that which he thinks, then, must necessarily be or exist. So he ends his reply to Gaunilo, and adds (c. 10) some graceful words of thanks to his kindly critic.

I have tried, so far, to put before you, as well as I could, the ontological argument as stated and defended by its discoverer. Let us now proceed to look at its subsequent history.

As Anselm gives it, the form of the argument is this: that whoever thinks that that *quo majus cogitari nequit* is not real thinks a contradiction; for he thinks that that *quo majus cogitari nequit* is less than what *can* be thought, viz., that which should add reality and existence to whatever attributes he supposes that *quo majus cogitari nequit* to possess. In the very act of thinking of that *quo majus cogitari nequit* and existence as apart, one thinks of them together: and thus the contradiction arises. Now the first thought which arises in considering Anselm's argument is this: that there are many things which we can think, and yet think not to exist: and so to affirm that thinkableness carries with it the implication of reality would seem to involve the assertion of the reality of all these—of a "Lost Island," for instance, as in Gaunilo's illustration. This is the most obvious of all objections to the argument, and the great acceptance which Kant's criticism met with was largely due to the stress laid by him on this objection, and to his instance of a hundred dollars, which it was one thing to have in thought, and another to have in one's pocket. The Kantian antagonism to the Ontological Argument goes deeper than this; it lies at the very heart of the Kantian philosophy: but it was this objection, and the example, which appeals to the ordinary man in the street as nothing else would, that gave it popularity. When Hegel answers that God is something very different from a hundred dollars, it seems as if he did not meet the objection, that he only bluffed it, so to speak: yet this answer is right and it is also Anselm's. If Gaunilo will prove that his argument applies to anything but that *quo majus cogitari nequit*, Anselm promises to give him the "Lost Island," never to be lost again. There is in the discrepancy of reality and thought no difficulty, so long as the object of thought is one which does not claim to be other than contingent and transitory. A perfect island can be thought not to be; eternal reality is no part of the content of this conception: but the notion of the *summum cogitabile*, on the other hand, involves its eternal reality; unless it is eternally real, it becomes self-contradictory; for it has been characterised only as the complete and adequate object of thought: but this character, if it is not eternally real, it no longer possesses. Now I will not deny that

it is difficult to acquit Anselm of a formal fallacy here; it may be said that if you think of a most perfect island as not existing, you think of a most perfect island, which, however, because of its unreality, is less perfect than the least perfect existing island; and so it is not the most perfect island after all; and that you have to pass beyond the limits of the argument, and assume that the transcendence of reality by thought, though admissible in matters of detail, is not admissible ultimately. But if this was not made plain by Anselm, nay, was not plain to himself, it was because the point of view from which the objection could be maintained was reached neither by him, nor by his opponents in his own and immediately succeeding periods. Neither he nor they contemplated that complete dualism of thought and reality, by the suggestion of which the Critical Philosophy of Kant was, in fulness of time, to test that belief in their unity which common sense really has, but of which only a few divine the full implication. Hence the censure of Gaunilo is not thoroughgoing, and Anselm's answer, though implicitly the true answer, is not so explicitly: it rather shadows forth than clearly brings into view that difference between God, on the one hand, and the "Lost Island," or the hundred dollars, on the other, upon which it hinges. The minor defect in the argumentation, however, is seen from the first: that while it is a condition of the success of the reasoning that the subject *quo majus cogitari nequit*, which is to be seen as contradicted by the ascription to it of a merely ideal truth, should not itself have a self-contradictory content, this condition is not expressed in the statement. This difficulty Anselm indeed recognises in his rejoinder to Gaunilo, so far as he lays stress on the intelligibility, even to the fool, of the expression *quo majus cogitari nequit* (*Lib. contra Resp. pro Insip.*, c. 9), and on the fact that it is thought in the very denial of it. But the objection was often repeated in the Middle Ages and later, in hostile criticism of Anselm's proof, which indeed, down to the time of Descartes, met with but little acceptance among philosophers. It is sometimes spoken of nowadays as a pre-eminently Scholastic argument: but the majority of the Schoolmen would have none of it: whereas it has played no small part in the controversies of modern philosophy.

I will touch very briefly on the fortunes of the argument during the Scholastic period. Albert the Great (*Opp.*, xvii, S.T. i, 3, § 16) seems to acknowledge the validity of the argument, which, however, he states in a form which fails to express the peculiar force of Anselm's reasoning: in this form, viz., that whatever is greater is always to be attributed to God, necessary existence is greater than existence which can be thought away, therefore necessary existence, which cannot be thought away, is to be attributed to God.

Albert's great pupil, St. Thomas Aquinas, is a decidedly hostile critic of the argument, and was, until the modern period of philosophy, commonly considered to have demolished it, just as was the case with Kant at a later time; thus Descartes, when he propounded his new form of it, was at once met by the objection that he was only resuscitating a fallacy which St. Thomas had exposed, and was compelled to take pains to distinguish his view from that with which St. Thomas had dealt. (See *Med. Obj. 1 mae*, by Caterus, and *Resp. ad Obj. 1 mas*, ed. Amstelod, 1670, pp. 51, 60.) St Thomas contends (*S. contra Gentes*, i, 10, 11) that the argument only holds if the existence of something *quo majus cogitari non potest* be already admitted; if such a thing exists, it may be held to exist necessarily; but without assuming existence at the outset, reality does not follow from that notion, any more than from any other. He also observes that *quo majus cogitari non potest* is not what is universally understood by the word *Deus*, many having held that God was a body. St. Thomas does not go deeply into the matter; indeed Saisset, a French scholar who has composed a monograph, *De variâ S. Anselmi in Proslogio argumenti fortunâ* (Paris, 1840), is probably not far wrong in his suggestion (p. 48) that Anselm's argument received but scant attention from minds preoccupied by the *a posteriori* proof from nature, which came with the recommendation alike of Holy Scripture and of "the Philosopher," who in the *Metaphysics* had concluded from motion to a first mover. Another pupil of Albert, Henry Goethals, of Ghent, a thinker whose name is less widely known than those of Albert or Thomas, but who was a very conspicuous person in his time, the thirteenth century (much of the philosophy of Duns Scotus seems to have been developed as a polemic against him), is said by Saisset (p. 35) and by de Rémusat (*Anselme de Canterbury*, p. 450) to have used Anselm's argument. This assertion seems to be based upon a mistake. Both the writers that I have named copied the statement from Huet (not the famous Bishop of Avranches, but a student of things mediæval, who published a work on Henry of Ghent in the year 1838). He makes it on the strength of a single passage, which he, as it seems to me, misunderstands through taking it out of its context.*

Turning from the Dominicans to the Franciscans, we find a

* S. T. qu. 2, art. 22. *Non contingit cogitare Deum non cogitando Deum esse quia talis cogitatio sequitur naturam rei et consistit veritas talis cogitationis in adæquatione quadam rei et intellectus.* This looks well, but loses all its point when we see that *talis* refers back to *intelligere* just above. The *talis cogitatio* is *intelligentia*, and Henry's point is that one cannot understand (*intelligere*), the Divine Essence, without understanding that it is: for *such* a thinking of it as we

parallel to the different attitudes of Albert and St. Thomas Aquinas towards Anselm's argument in those of St. Bonaventura and Duns Scotus. St. Bonaventura, in a passage to which Saisset gives a reference, quotes the argument, which he wrongly says comes from the Monologion, but only as an instance of the "Saints declaring" that God exists (*Comp. Theol. Verit.*, t. 1; see Saisset, p. 35). Elsewhere (*Opp.*, v, pp. 47-50), in the *Quæstiones de Trinitate*, he discusses Anselm's argument, Gaunilo's instance of the "Lost Island" (though he does not mention Gaunilo's name), and Anselm's answer to Gaunilo, which he represents as a pressing of the difference between the inherent repugnancy of subject and predicate in the case of the island and the absence of such repugnancy in the case of God; that is, he takes the "possibility" of the conception as postulated by Anselm himself. Again in his work on the "Sentences" (*In Sent.*, d. 8, p. 1, a. 1, q. 2) he treats further of Anselm's argument, and accepts it as sound, specially insisting on the point made in the *Liber contra Respondentem pro Insipiente* as to the difference between the contingency of the existence of whatever is here, and not there, or everywhere, but only as extended (one part here, another there) on the one hand, and the necessity of the existence of God, on the other, who is *semper et ubique totus*.

Passing from Bonaventura to Duns, we find the latter philosopher saying that Anselm's proposition is not *per se nota*, self-evident, and that Anselm does not claim for it that it is; it depends, in fact, upon two syllogisms, viz., (a) *Omni non ente ens est majus, Summo nihil est majus, Ergo nullum summum est non ens*; (b) *Quod non est non ens, est ens, Summum non est non ens, Ergo est ens* (*Opp. Oxon*, 1, d. 2, qu. 1, art. 2). Below (c. 13, *cp.* Erdmann, *Hist. Philos.*, Engl. tr., i, Sec. 214, 7) he seems to accept the argument, with the correction that the conception must be assumed to be inherently possible (*sine contradictione*), and uses it, if I understand him aright, not to prove God's existence, but, given that, his infinity; thought, he argues by the Ontological Argument, requires a Supreme Object, as desire a Supreme Good. One distinguished Scotist, Pierre Oriole, or Petrus Aureolus, accepts (*Sent.*, 1, d. 2, art. 6) the argument of Anselm, but admits the alternative that the conception of *quo majus cogitari nequit* may contain an inherent contradiction or repugnancy; this alternative must be excluded, by showing the self-consistency of the subject, before passing to the predicate of being or existence.

call *intelligentia* follows the real nature of the thing. But he adds that one can think of God *without* thinking of him under the of "being," although there is in him no real distinction of "being" from other qualities, but *in intellectu tantum*. Jourdain, by the way (*Philosophie de St. Thomas d'Aquin.*, ii, p. 339), knows that Henry of Ghent did not accept Anselm's argument.

The argument of St. Anselm was thus remembered through the Middle Ages, but with little acceptance and little influence. It was to be recalled into prominence at the inauguration of modern philosophy by Descartes. The points of likeness and unlikeness between Anselm and Descartes are instructive enough. They were alike in the independence of their intellectual temperaments, which preferred the consultation in lonely thought of the oracles of the mind within to the accumulation and criticism of other men's opinions; alike also in the susceptibility of both to that great master of introspection, St. Augustine, in whom accordingly is rightly to be sought the origin of the *Credo ut intelligam* of the one, as of the *Cogito, ergo sum*, of the other; and the germ, as some have thought, of the ontological arguments of both. They were exceedingly unlike, on the other hand, in their attitude towards religion; religion was the life of Anselm's thought, and the mask of Descartes'. This comparison and contrast has more than a merely biographical interest. In its Cartesian resurrection the Ontological Argument more clearly reveals at once its character as the supreme expression of the self-confidence of thought, and its inadequacy, taken by itself, to bring us to the intellectual vision of the Christian God. In Descartes' form of it (*Med.* iii) the idea of God, that is, of an infinitely perfect Being, in our minds which are finite and imperfect, and so could have brought no such idea out of themselves, gives us by itself the assurance of the reality of its original in a cause adequate to such an effect, that is, of the existence of God. Here the psychological bias of modern philosophy appears; our all-critical doubt stops at the mind which doubts; and this mind is found to have in itself a thought which contradicts the mind's own finitude by its presence, and manifests, with a certainty only less, if less, than that of the mind's own existence, the existence of the Infinite Being, who is its original. It is only a step from this to the express declaration of Spinoza, that the mind is part of the Infinite Intellect of God (*Eth.*, ii, prop. xi, Coroll.). The difference is rather in the greater conformity of Descartes' language to conventional orthodoxy than in the essential thought. But the approximation to Spinoza at once suggests that the God we have here to do with is not the God of Anselm. The argument for his existence is, as I have said, the expression of the self-confidence of thought; that thought, when satisfying its own canons by the clearness and definiteness of its ideas, has in itself the only possible, but also the sufficient, guarantee of its validity; i.e., of the reality of its object. Although Descartes always strove to keep the expression of his opinions within the limits of orthodoxy, so as to avoid any conflict with the Church; although, moreover, he laid stress on one ethical attribute of God, viz., his veracity, because this

enabled him to effect the passage from facts of consciousness to that external material world in the investigation of whose laws he was so deeply interested; yet it is certain that the ethical and religious interest may fairly be said to have been lacking in Descartes, who thus (as far as I know) does not concern himself with the divine Trinity, which was the life and soul of Anselm's philosophy. As to the one ethical attribute of God, moreover, on which he insisted, he arrives at that by saying that the God whose existence he proves has all possible perfections of which we can have the ideas, and that is how we argue to his existence from our idea of perfection; hence also veracity; for the clear light of nature shows us that *tromperie* is a defect. There may be held to be a circle here; our ideas are trustworthy, because God is true; but the light of nature, or the clearness of our ideas, is the ground of our belief in his veracity; this brings out the fact that the Ontological Argument is really the expression of the self-confidence of thought. We see the way of Kant being made ready. The Ontological Argument professes itself to be the symbol of that which he came to doubt and to try, namely, the adequacy of thought to reality: and the falling off from the idea of God of those ethical determinations so prominent in Anselm's mind, prepares us for the doctrine that not this way, but starting from the moral consciousness, as by a totally different path, can a reasonable faith in the God of religion be attained.

I shall not pursue in any great detail the history of the Cartesian argument, for that would take us too far from Anselm; moreover the materials are abundant, and easy of access. (See especially the "Objections" appended to Descartes' *Meditationes*, with his replies; Malebranche's Second *Entretien sur la Métaphysique*; Cudworth, *Intellectual System*; Leibnitz, *Nouveaux Essais*, iv, c. 10). To mention no others, Hobbes, Gassendi, Cudworth, Malebranche, Leibnitz, have all left us criticisms upon it. The last named (who thinks that Descartes was really indebted to Anselm for his argument, though he did not acknowledge the obligation) sought to secure the argument against the oft-repeated objection, that the possibility, i.e., self-consistency, of the subject was assumed, by expressly adding this proviso; in this way the conception of an infinitely perfect Being was distinguished from such only verbally intelligible conceptions as that of a "swiftest possible motion"; while with the proviso, the argument seemed to him to be undeniable; for, in the case of a Being *ex hypothesi* eternal, possibility, apart from reality, is inconceivable. In this form, with this correction, the argument was transmitted from Leibnitz to Wolf, in whose school, as we know, Kant enjoyed a dogmatic slumber, till he was awakened by Hume. The correction

of Leibnitz indeed was less effective than he hoped, in silencing objections. Mosheim, the celebrated ecclesiastical historian, in a long note to be found in his Latin translation of Cudworth's *Intellectual System*, by which he made that prodigy of English learning known to the scholars of the Continent, already observes (p. 98) that the difference between the "real" and the "ideal" emerges again in respect to "possibility"; "possibility" itself may mean either the presence of adequate causes, or our ignorance of their absence; and from the latter you cannot conclude to the former. It is not difficult to see that an answer could be made, that in the case of God in whom causes of his being other than himself, are excluded by his idea, this distinction within the conception of "possibility" disappears; but a further rejoinder might be imagined to the effect that the possibility of a Being having "aseity" (as it is technically called) may be merely an "ideal," not a "real" possibility, and so on *ad infinitum*, till the true issues are brought out by the challenge to the claims of thought by the Critical Philosophy. St. Thomas Aquinas, and the Schoolmen least favourable to the Ontological Argument no less than Anselm himself, the majority of the opponents of Descartes no less than his followers, had always allowed the identity in God of *essentia* and *existentia*; and this made the objection to the argument one of method, rather than of principle; in Kant, for the first time (so far as I know) this doctrine was not only neglected—as no doubt it was by the English empirical philosophers—but plainly denied, inasmuch as the notion, or concept, of God was held to be neither verifiable in possible experience under the forms of space and time, nor transcendent, *i.e.*, performing the incredible feat of passing beyond such possible experience, so as to give knowledge of what lies beyond, of the "Thing-in-itself," *i.e.*, out of relation to knowledge; but transcendental only, a regulative, not constitutive, idea of the reason.

We have now, then, to consider the Kantian criticism of the Ontological Argument. We must especially note that Kant recognises to the full its importance, and regards it as lying at the very heart of the Rational Theology; the teleological or Physio-theological, and the Cosmological Proof are alike wholly dependent upon it for their apparent cogency. The Physio-theological Proof, or Argument from Design, can carry us no further than to some powerful and intelligent cause of the world; but not to one sole, allwise, and almighty. For how can we know that the world may not have been produced by a cause of limited, though extensive power, of limited, though great, wisdom? What can we know of the proportion which the greatness of the world or its order bears to omnipotence or highest wisdom? And how can we infer from its

unity the absolute unity of its author, rather than the co-operation of several agents to effect one common work? The Argument from Design can only carry us beyond this unsatisfactory result if we eke it out with the Cosmological Proof, and on metaphysical, not empirical, grounds infer from the contingency of the world a necessary, or unconditioned Being, without which we should be lost in the infinite regress of conditions themselves in turn conditioned. But even so, says Kant, we are at a loss to know what the nature and properties of this Necessary Being can be, unless we eke out the Cosmological Proof, in its turn, with the Ontological Proof, assuming that the *Ens Realissimum* given us by the latter is alone adequate to the conception of a Necessary Being inferred by the former. The whole force, therefore, of the Kantian attack on Rational Theology is brought to bear on the Ontological Argument. And he attacks it, as we might expect; the existence of the subject of a judgment adds nothing to its content; the subject existing is, no doubt, more than the conception, as a hundred real dollars are more than a hundred possible dollars in the reckoning of my wealth; but there is no more in the *conception* of the former than in that of the latter. As I said before, this illustration is one which has obtained great acceptance, because of its appeal to vulgar interests; but this tends to mislead us as to the true bearing of the criticism. For it is easy enough to show that a hundred dollars are something very different from the *Summum Cogitabile*. St. Augustine (*De Trin.*, ix, 14), speaking of the love of gold, which does not rest in itself without possession, and is always indefinite and insatiable, whereas this is not so with what is spiritual, has answered by anticipation the objection drawn from Kant's instance. For, as it is said:

"Who can hold a fire in his hand
By thinking on the frosty Caucasus?"
(*Shakespeare*, *Richard ii*, Act 1, Scene 3.)

and to think of a hundred dollars is very different, and far less satisfactory than having them in my pocket, but then, while the most important thing about "fire" is its burning, and about "dollars" that they can be handled, a sensible verification of the idea of God is, firstly, in a strict sense, inconceivable; "no man hath seen God at any time" (St. John i, 18; *cp.* 1 St. John iv, 12); secondly, even so far as sensible events may "declare" him to us, yet the sensible experience is not the knowledge of God, which must be spiritual—"within us" (St. Luke xvii, 21; *cp.* Rom. xiv, 17)—and in respect of which it is idle to ask for a confirmation from sense. The point, however, of the Kantian criticism lies elsewhere; not where the common man thinks, in a vulgar contempt for all but

material good, which is congenial to his lower nature; but in a question respecting the relation of thought to reality, which is much further from this same common man's apprehension than (if he understood it) the Ontological Argument itself.

If Kant is right: if the world of experience, wrought by the understanding out of the matter given in sensation, remains for ever confronted by the Thing-in-itself, unknown and unknowable, in the presence of which it can lay no claim to a transcendental, but merely to an empirical, reality; if the reason, in its inevitable pursuit of ideas, which can, in the absence of the possibility of verification in sensible experience, be considered as merely illusory, is doomed, as it were, to the fate of the mythical Ixion, whose presumptuous attempt to embrace a goddess was mocked by an airy phantom in her shape; then, no doubt, the supreme expression of the reason's confidence in itself, the Ontological Argument, is altogether vain.

But the epoch-making work of Kant, like all such work, contained within itself a double possibility. It was open to his successors to emphasise either the doctrine that there is a thing-in-itself, or the doctrine that the Understanding makes Nature: and accordingly Kant is the parent, on the one hand, of the agnosticism of Mr. Herbert Spencer, on the other, of the absolute idealism of Hegel, and of those, who, in various ways, have felt the inspiration of Hegel.

If the latter be, as I cannot but think, the legitimate succession of Kant, then we shall see that with the cashiering of the Thing-in-itself and the whole-hearted acceptance of the principle that the Understanding makes Nature, the Ontological Argument reasserts itself after the Kantian onslaught, and again affirms that there can be no justification for stopping short in one's confidence in thought at the point where verification in sensible experience ceases to be possible, because there is no place for it; that a higher warrant for reality than complete rationality cannot be found; that, if all is Experience, and if it can only be as the last and emptiest abstraction from Experience that a Thing-in-itself can even come to be thought of, there is no reality, not even one's own, more sure than that of the *Ens Realissimum*, the *Summum Cogitabile*. We come into being, and pass away; but this too is only something within Experience, within the Absolute, which is eternal.

The astronomer "swept the heavens with his telescope, and found no God"; and, assuredly, if the existence of God were a thing which a telescope could discover, the telescope, and not the Ontological Argument, is the instrument to use. But, if by the existence of God it be meant that the shifting phantasmagoria of the individual consciousness is no aimless dream, but the manifestation of a permanent Reality, then the Ontological Argument may help us

to realise this; to bring before the mind, when the solid world has been found to be only a phenomenon in its consciousness, and yet that consciousness itself staggers and reels, sick of its own contingency and transciency, that this very misery is its witness to the Necessary and Eternal Being in which it lives and moves and has its being: but for its knowledge of which it would never thus sicken of the contingency and transciency which it can only know by transcending them.

But now we find a new difficulty arise concerning the Ontological Proof, which the history of it, since Descartes, had already done something to suggest to us. It will be said that the Ontological Proof can perhaps bring us to the knowledge of an Absolute; but is this Absolute, in any sense, the God which religion needs as its objects? There is no more eminent teacher among us of the philosophy which puts its trust in thought than Mr. Bradley; and he is ready to accept (with the Leibnitzian correction) the Ontological Argument (*Appearance and Reality*, pp. 149-150, 395-400), and uses it indeed (*ibid.*, p. 196) in the form: "What is *possible* and what a general principle compels us to say *must* be, that certainly *is*." But Mr. Bradley's Absolute is certainly not the God of religion. Neither personality nor moral predicates can, according to Mr. Bradley, be ascribed to the Absolute. But, it may be said, if this is all that the Ontological Argument can give us, it is not a proof of the existence of *God* at all. I will not now repeat what I said on the last occasion (in the Symposium on "Does Law in Nature Presuppose Prevision?" April 1, 1895) on which I had the honour of addressing you, on the subject of the personality of God, and of Mr. Bradley's strictures upon this representation. But I will say that it seems to me that if the Absolute reached by the Ontological Proof is not understood, as by Anselm, because it must have all perfections in the highest degree, therefore to be the Supreme Good, and, in an intelligible sense, personal: unless the hierarchy of perfections which sees the Greatest in the Best (see Anselm, *Monolog.*, c. 2, &c.) be recognised; then the result is that the true Nemesis of error comes, the Supremely Intelligible, or the Noumenon of Plato, passes over into the Supremely Unintelligible, or the Noumenon of Kant; and idealism commits suicide. Kant's "moral proof" is not so far as it seemed from the ontological proof which he rejected. The God of Kant's ethics was the common principle of the moral and natural worlds: and we are not bound by the Kantian dualism of *ought* and *is* so thoroughly that *we* too should refuse to recognise the close kinship between the demands which the moral and speculative consciousness respectively make upon the world: which indeed Kant himself means us, I suppose, to recognise in a measure, by making it God—the "Ideal of

the (Speculative) Reason," that the Practical Reason, as he puts it, must postulate.

One word may be added in conclusion on the practical value of the Ontological Proof. To those who are not of a metaphysical turn of mind it will never readily appeal: to those who are of a metaphysical turn of mind, it may often appeal only as justifying belief in an Absolute, but not in what religion needs as a God. The ethical interpretation of the notion of an *Ens Realissimum*, which is requisite to give it religious significance, assumes a certain ethical standpoint. The Ontological Argument may help a man in moments of reaction to which metaphysically-minded men are liable, when thought, distrustful of itself, asks whether all its speculation is not a baseless fancy; then it may convince him that, after all, you cannot go beyond Thought: that here is your sole criterion: that the bugbears of Thought are Thought's own making: and that oftentimes, when it is scared, it is only afraid of its own distorted image in a glass it has fashioned for itself. But the ethical standpoint from which the *Ens Realissimum* is seen as what it professes to be and does not cancel or absorb what is most real in experience (as Mr. Bradley's Absolute, I will venture to say, does cancel and absorb it)—that standpoint is not reached or maintained without an experience such as we commonly call religious, such as is historically associated, on the whole, with the Christian life. And this is Anselm's own conviction (for by "faith" he understood rather a life, and an experience, than a mere acquiescence in authoritative dogmas—see *Monolog.*, c. 77, and *De Fide Trinitatis*, c. 2).

"Credo ut intelligam ; nam et hoc credo, quia nisi credidero non intelligam."
(*Proslog.*, c. 1.)

PHILOSOPHY AND NATURALISM.

By HERBERT W. BLUNT.

THE task of philosophy has been described as the construction in its ideal possibility of a world which in its concrete actuality we in some sense cannot but accept. Philosophy endeavours to restore to sanity a common sense which has contracted inevitably the disease of self-consciousness. Common sense can only acquiesce in the world as a single rational order so long as it is unconscious of the need to face scepticism with an insistence upon the reality of such an order. So soon as it feels the necessity for a theory or a synthesis, such theory

or synthesis must, says philosophy, be found in and for common sense but not from it or by it. To grasp the world as a rational whole it must, according to philosophy, be construed or recreated from the point of view of the unity of thought. Common sense, on the other hand, when first awake to the need of a synthesis is not therefore necessarily inclined towards the philosophic position. It tends to look rather to some organising object or principle in the world of persons and things which it does not and cannot doubt, and to treat this organising element as the true basis of the required reconstruction or reconciliation.

Thus in each age the opponent of philosophy will be found in that organising power of common-sense theory which for the time being bears completest sway in practical life. And it seems that in each age philosophy is influenced and tinged by the principle with which it is in antagonism.

In the old world the quarrel of philosophy was with poetry, that is, with the creative imagination figuring to itself as explanation of its problems a sensuous and perceptual something behind the facts and beyond the doubts. And the first great essay at a counter philosophic synthesis, taking its starting point in the activity of thought and arriving at the last at objects or the object of thought, found a critic to say of it that the way of ideas, too, was coloured by the poetical imagination in which it had detected the enemy, and had simply strained after eternal objects of pictorial imagination, that it was indeed poetry after all.

In the modern world the common-sense theory with which philosophy has to do battle is no longer poetic but scientific. It is no doubt true that the plain man goes by no means more to the philosopher or scientist for his synthesis of life than to the preacher, but rather to the poet. But art is no longer obviously poetical. It either has a definite, if usually inadequate, philosophy underlying it, or it is psychological, that is, quasi-scientific and naturalistic. Poetry either undertakes the task of interpreting philosophy to sense, or it embodies a new synthesis which has its organising principle no longer in the artistic impulse but in the scientific. Its main ideas are no longer images of sense but concepts symbolised by these, its method is no longer the analogy of creation but the analysis which is characteristic of science.

And so the modern world is prosaic or its highest poetry is philosophy poetised or science poetised—in any case bad poetry, and perhaps bad philosophy and science as well. At any rate, so far as philosophy has not conquered her ancient rival, a newer competitor has done so—Naturalism, with its realism of the dissecting-room.

The reason for the emergence of naturalism as the enemy to philosophy obviously lies in the tendency of common-sense theory to take its shape from the dominating conceptions and methods of the practical life of the time, whatever these may be. And in our century science has completely over-mastered unorganised common sense as it has over-mastered art. It has made itself the one force in which we all perforce believe with the sincerity of practical life. Science with its applications has taken its place as organising principle of external synthesis, has expelled art save as the latter can embody or interpret the romance of science.

Once again in the biological group of sciences a standpoint has at last been reached from which, for the first time, the challenge issued to philosophy by science is sufficiently formidable to be serious. Naturalism can look back and forward and say: our biological facts connect thus and thus with organic chemistry, which in turn connects in this way and that with inorganic chemistry, as this once more with physical arrangements of molecules; while, on the other hand, a psychical process is but another aspect or a mode of behaviour of a neural process. In the organisation of the forces of science with biology for nucleus, or in the continuity avouched as the law of organic evolution, the materialistic synthesis may be said to have attained to such completeness and finality as plausibly to forecast, if ever, a triumph in the battle with philosophy. Fully armed and flushed with undoubted victories within its own territory, Naturalism confronts Philosophy. On what lines and with what success does philosophy keep the field?

Naturalism has subjected the data of common sense to scientific analysis, has organised the results, and claims to apprehend the world under the categories of physical and biological evolution as a continuous whole in which there is no work for and no room for philosophy. Philosophy claims that the synthesis, even if complete, is still only scientific, a part of what the philosophic synthesis needs to explain, that it is still in philosophy only that we are spectators of all time and all existence.

To this controversy I may as well confess at once that I have no novel contribution to make. I want merely to formulate for myself rather than for others the points on which it seems to me to turn. What is implied in the synthesis of life offered by naturalism, how does it affect the philosophy of our time and its pretensions? Is the law of continuity in nature, with the struggle for existence and natural selection according to utility or fitness, a complete theory of the world, or the most complete theory possible for men? or is the claim of naturalism only one dogmatism the more? according to the gloss of the old lexicographer: *φυσιοῦται*

δογματίζει, θεολογεί. "So you burnt your metaphysics?" it was asked of Thorndale. And the answer was: "Not exactly, but I studied physiology." Are we to burn our metaphysics, and whether we do so or no, what shall we gain by the study of physiology?

In the first place the claims of naturalism must not be met by denying the facts of science, by belittling the achievements or ignoring the competence of science in its own field, by claiming jurisdiction in purely scientific controversies, or by selecting of opposed scientific opinions that which most fits in with our philosophic synthesis.

We cannot, for instance, without disingenuousness, gainsay the descent of man from lower forms of life. We must accept as fact the statement that human will and reason are the last link in a chain of biological development, that the reflective consciousness which has a unitary theory of the world has been evolved through brute and still lower organisms.

We may point out that the gaps at several points, notably between the organic and inorganic, are, despite of the multiplicity of intercalary phenomena which suggest continuity, still unbridged. But we must allow that the problems are to be solved, if at all, by science and its methods, and not by the sentence of philosophy. We can only insist that science be true to its own methods, and do not affirm the continuity until so proven as to satisfy the logic of science. It is fair to insist that organic and inorganic are contradictions "which admit of no intermediate or transition stage," but, keeping to logic, we must accept the answer that the contradiction is verbal only, and from *δύναμις* to *ἐνέργεια* there is free passage. We may deprecate the passing from one class of scientific objects to an alien genus, but what constitutes an alien genus within the purview of science is not, as such, a question to be decided by philosophy. At the other end of the scale we may point to the phenomena of will,—I select this example because I myself think that an admirable psychology of the will can be produced by evolutionist science,—and may urge that the exposition of them in terms of physical or purely mechanical causality should not be given as final until such time, if ever, as they are resolved into purely mechanical equivalents. We may insist that unexplored remainders have been most fruitful regions of investigation in science, that it is unscientific to slur them, but that scientific investigation cannot resolve these phenomena we must not say unless prepared to show that psychology is not a science, or that some of the points at issue do not belong to its domain.

A temptation to attack naturalism in its own field, to which I for

one find it hard not to succumb, is presented by the scientific controversy between Weissmann and his opponents. Inasmuch as the only fully-formulated system of naturalism—that of Mr. Spencer—stands and falls with the transmissibility of acquired characters, the anti-Lamarckian hypothesis gives a leverage of at least momentary value, which it requires some reflection to see the invalidity of using. Many, too, of Weissmann's positions are what we would wish to be true in the science of ethics. But, unless we are men of science as well as students of philosophy, we must not take sides. The controversy is an all-important one in the determination of the mode in which the naturalistic synthesis is ultimately to formulate itself, but it is not a part of the question at issue between Naturalism and Philosophy. Spencer's theory of heredity is as little of the essence of naturalism as his hedonism in ethics.

Once more. It is hard to define the scientific and the philosophic problems connected with the relation of thought and brain. To intervene in the scientific field and depreciate the work of brain surgery in localisation of functions, and the like, is to fight against truth and implicitly to invalidate the philosophic synthesis by combating the postulate upon which its pretensions depend, that all truths will harmonise, for all is of one piece. The *tant pis pour les faits* attitude is least of all becoming in philosophy, and the facts of empirical correspondence of brain changes and thought processes are at this stage in the history of scientific progress well established. On the other hand, the inference which is often made by science to the conclusion of philosophic import that thought and molecular motion in the brain are double aspects of the same thing, in the sense that thought is simply a mode of behaviour of brain, while brain processes are, or are not, similarly but modes of behaviour of thought, is not to be accepted in the form offered.

In the second place, the legitimate answer of philosophy to naturalism seems to rest on three main lines of argument, not involving a *μετά βασιν εἰς ἄλλο γένος* :

- 1st. The assertion of the spiritual principle in nature.
- 2nd. The reduction of psychology to its rightful position as against that assigned to it by naturalism.
- 3rd. The exposition of the ethical inadequacy of naturalism.

To these we may perhaps add the demonstration of the insufficiency of certain quasi-philosophical dogmas necessary to justify naturalism, as it has been hitherto formulated, either as unitary or as complete.

I. The scientific standpoint is alleged to supply an adequate synthesis on the ground of the simplicity and concreteness of its data. But it owes these very data to a primary act of philosophic

thought, and they are neither simple, nor, in one sense, concrete. Science is an abstract point of view dealing with objects as known, as distinguished by thought, perhaps as constituted by thought. Its abstraction consists in its assumption that the act of knowledge is indifferent to, irrelevant to the objects of knowledge. Such objects, it is urged in criticism, are not sensations nor molecules in motion apart from consciousness, nor groups or aggregates of sensations, or of molecules in motion. If they were merely molecules in motion, they could not be known to be such.

The mind makes nature, and my mind re-makes nature in a way which I must postulate if the world is to be and to be understood as an orderly whole. Accept this position and you make nature dependent upon thought, even so far as regards its material. Nature then cannot be an ultimate ground of synthesis, for it itself has for its principle of unity the unity of mind. Deny this position and nature becomes incoherent or chaotic. For apart from the unity in some sense of at least my consciousness, the elements given as existent and to be known,—whether they be given in an orderly or an incoherent series being so far indeterminate,—could not be grasped even as a series, and *a fortiori* not as a cosmos. And the nature of the series, as co-ordinated by me in a cosmos, implies not only the unity of my consciousness, but the unity of all consciousness and the affinity and ultimately the identity of my consciousness with it.

Not even nature is natural, if by nature we mean the world of persons and things taken as existing in indifference to consciousness. It is not thus self-existent, save as an abstraction. But if nature is more than this, then everything,—consciousness and its content,—is natural, and the opposition of naturalism and philosophy is extinguished by the subsumption of naturalism, as a partial aspect, under the philosophy of reflection.

II. Psychology is inevitably put into a false position by naturalism. It is the science which deals with conscious processes as they arise in time in the individual. Hence it is necessarily empirical, for these are not deducible as a matter of course, *a priori*. Since, further, these processes are capable of correlation with physiological and physical processes as a matter of fact contemporaneous, an empirical jumble of facts may be put together which belongs undeniably to the sphere of science rather than of philosophy. But as science, psychology is eminently unsatisfactory. Its data are directly accessible only to introspection, and this, further, is the only interpreter of data arrived at indirectly. And introspection confessedly mutilates and distorts its objects. The result is a mixture of a few psychological facts ascertained somehow by introspection, with a certain number of physico-physiological facts interpreted

psychologically by the same incompetent but sole available medium, and this most hopelessly unscientific *παραμυρία* is all that there is of psychology proper.

But naturalism, assuming the world of things and persons orderly constituted, and knowing that this world is in some sense an object of knowledge, now expounds, at some pains, the way in which the world reflects itself on the mirror of individual's mind—naturalism dearly loves a material metaphor—and having given, *en créateur, qui sait son secret*, a genetic psychology, which, if adequate, only explains how the world, if given as an orderly cosmos to be experienced, will reappear more or less accurately depicted in the mind processes of the individual, then claims to have given a complete theory of knowledge. It is easy to say that philosophy is based on psychology, psychology on introspection, which is incompetent and needs bolstering by "objective" methods, that these objective methods of natural science are therefore the ultimate basis of philosophy so far as valid.

The truth is not so. The experience which philosophy analyses, or which thought constitutes and reflection constructs or reconstructs out of data given in and through the psychological processes of the individual mind, is not the psychological "world of my ideas," any more than the orange I see is my individual percept of the orange, or than the evolutionary process, cosmic or biological, is identical with the psychological processes in me whereby it is known. The reflection which is the organon of philosophy is not the introspection of psychology. It does not strive, usually in vain, to observe the mind processes of the individual, but it passes to what is communicated in those processes. It seizes them not as "psychical events," but as having "meaning" or "contents." It is not a faculty of observation, but a power of analysis. It creates a world, or recreates, by affinity to thought universal, a world created by that thought.

By taking psychology as a master science, naturalism finally commits itself to a dualism which inevitably results not in mere scepticism or doctrine of relativity of knowledge, but in Agnosticism, dogmatic denial. So far, however, as naturalism deals with thought at all, it seems that it must take this psychological view, and this erroneous view of psychology,—that Dualism therefore and Agnosticism are of the essence of naturalism, unless by a *tour de force* naturalism dogmatizes a theory analogous to the monadology of Leibniz, unless, that is, it is at least as metaphysical as "the metaphysicians," which is Mr. Spencer's rather odd appellation for Berkeley. But Dualism and Agnosticism give up the attempt at the

synthesis which philosophy claims to make, and which common sense calls for.

III. It is in the sphere of ethics that the inconsequence of naturalism shows most clearly. Can men be other than automata endowed, indeed, with consciousness, but without power to change the iron mechanical causation of which they are the sport? The consciousness is a mockery of a grim kind perpetrated by nature, that with black pessimism, or worse still, contented illusion, the puppets shall play their parts, write books of ethics and read them because they must. Naturalism, which does not, like that of Aristotle, transcend itself and become a moment taken full account of, but, therefore, extinguished in philosophy, seems to me necessarily determinist in a sense excluding responsibility. Or else there follows the conclusion that we are accountable for and yet cannot help our actions, which is the final pessimism, subversive of philosophy, and of naturalism also, making neither worth pursuing, though necessarily pursued.

But the problems of will and reason, so far as they are not problems of evolutionist psychology, are, as presented to us by naturalism, necessarily insoluble. Will and Reason are there, and so are presumably useful. But inasmuch as a theory of either, especially on determinist lines, is of no utility, we cannot expect to have developed in us the power of deciding the nature of them. Thought, from the point of view of naturalism, is useful so far as it is directed to the investigation of the laws of the given world and adaptation thereto. Speculation beyond this is a mere bye-product, useless except to amuse, but so far not extinguished because it does not incommode. But it may perhaps, with the growth of philosophic societies, prove to madden men, and then let us hope its more speculative powers will atrophy from disuse.

Naturalism as a basis of ethics seems only able to stultify itself, to say that there is no ethics, that moral effort is a delusion, that pessimism is the only possible view of life which is not illusory, and that the pleasure in the world only out-balances the pain because we are the playthings of an organised deceiver.

The alternative is that naturalism should accept a teleological view from philosophy, abate its claims therefore, and merge itself as *datum* or *explanandum* in philosophy; that philosophy alone should be reckoned competent to give the *why* of evolution.

IV. Finally, naturalism as it has formulated itself is not only dependent for its assumptions on the world and the thought which are the problem and solution of metaphysic, but also for its completeness and unity, even as scientific synthesis, it seems to need certain assumptions which it does not itself supply. It must explain the

continuity of consciousness with the unconscious, either by a mind-stuff theory which is as dogmatic and as artificial as the Monad theory of Leibniz, or by a theory of *δύναμις* and *ἐνεργεία* carrying back to the metaphysic underlying and justifying scientific naturalism as given by Aristotle.

Leibniz is the dogmatist despairing of a philosophy of consciousness, and the pioneers of modern naturalism who stick more closely to the sciences and leave the synthesis to take care of itself, approach very nearly to another doctrine of this thinker, the Pre-established Harmony, a fact which perhaps throws some light on the connection of the Monad theory and the Harmonic *Praestabilita*. So long as thought has nothing to do with action, but is, as it were, the other side of molecular motion, a complete and unexplained doubling of aspects may be allowed all through. And so, having made their bow to what they call "mental and moral science," the masters of naturalism revert to their science or to their materialistic synthesis. That is to say, their attitude towards the problems of mind and body and mind and matter is not provisional but final; it is not the scientific attitude but the attitude of science "functioning as philosophy."

Naturalism in this form is alternative to philosophy, and its logical result seems the irrationality of the world with consequent pessimism. It may well be that philosophy has dogmatised in the fields of science and is inclined to invade the scientific sphere as science is inclined to oust philosophy from her seat. It may be that against the modern philosophical synthesis naturalism can formulate lines of adverse criticism fatal outside of very narrow limits and on all borderland questions. It may even be that there is no philosophical synthesis possible, as there seems to be no final one. The world may present an unconquerable dualism as will and idea.

But at any rate we cannot think so, and it is our daily action upon a synthesis which we must make, and which we cannot take to be illusory or we must go mad, that at present gives the advantage to philosophy. And it may be that naturalism, when it shall have learned the limits of the scientific imagination, shall have come to interpret the lower by the higher, and to respect differences even when maintaining continuity and identity, will effect a scientific synthesis, which, when it has grown old, may serve as a datum for a new philosophic idealism which is not tempted to deny facts, not embarrassed in the presence of a sensation or a feeling, not a victim of its own phrases, able to accept the sciences and their victories as something to be faced, an important part of the great whole which philosophy has to atone with itself.

PROFESSOR JAMES ON THE EMOTIONS.

By Mrs. SOPHIE BRYANT, D.Sc.

"MY THEORY, on the contrary, is that the bodily changes follow directly the perception of the existing fact, and that *our feeling of the same changes as they occur is the emotion.*" So runs Professor James's own brief summary of his theory concerning the emotions. My purpose to-night is, with all due respect for so acute an observer, to dispute its truth as a fact of experience.

It is by no means an easy matter to observe all the details of an emotion, especially if it be one of those which our author calls, rather harshly, the coarser emotions. The violent emotions they might equally well be called. These are naturally the stronghold of his theory, since it is the powerful bodily reaction which accompanies them (even if it be not their essence), that characterises them as coarse or violent. In violent fear, violent anger, or violent grief, most of us have at one time or other experienced some, at least, of the palpitations, and shudderings, and nausea, and gaspings, so vividly described by Professor James, and the writers he quotes. Moreover, it may be at once admitted that the abatement of these distressing bodily symptoms is a substantial reduction in the sum total of pain. But I am convinced, none the less, that the more any person of strong and steady nerve reflects on the test proposed by Professor James the more he will differ from Professor James's response to it.

"If we fancy some strong emotion," he says, "*and then try to abstract from our consciousness of it all the feelings of its bodily symptoms, we find we have nothing left behind, no 'mind-stuff' out of which the emotion can be constituted, and that a cold and neutral state of perception is all that remains.*"

To this statement my experience gives an emphatic negative. I do not even find it necessary in all cases to "abstract" the feelings of bodily symptoms. I cannot pretend to be familiar with all the varieties of emotion, but those which I know well are known to me in almost every case both markedly with and practically without the concomitant bodily reverberations. The physical distress of grief is a terrible thing while it lasts, but its subsidence leaves a solid nucleus of non-sensational suffering behind it. Physical remedies will allay this outer fringe of pain—fresh air for the shocked heart and lungs, tonics for the deranged digestion and shaken nerves—and the stricken man goes on his way with regular

pulse, breathing freely, a steady nerve, and a restored appetite. But is his grief thus cured—is it even greatly abated? Suppose he has suffered the loss of his dearest friend, or the irretrievable disappointment of his most cherished hopes. He was grieved and shocked—most persons, let us admit, are shocked—physically shocked—when greatly grieved. He has recovered from the shock, but the grief dies hard, if it die at all.

But, it may be said, although in one sense the grief survives the bodily reaction, it does not survive as an actual emotion, but only as a predisposition to the recurrence of the emotion on the lively memory of the circumstances from time to time, and when the emotion does recur it is the bodily disturbance that recurs, and is it as before. I will admit that the grieving man who has pulled himself together and goes about his business, as grieving men and women do every day, is giving his mind to other things a great part of his time, keeping thought at arm's length, and with it the actual emotion of grief. It is correct to describe him during his busy moments as not under the emotion, but predisposed to come under it whenever he lets his mind swing back to rest. It is in his arm-chair by the fire that bad moments come. Now Professor James holds that the bad moment comes with, and consists in, the advent of the characteristic physical distress. My experience tells me of these moments, but also of others, not less wretched emotionally, when nerves are steady but existence black. Indeed, when we are shaken we have, at any rate, one comfort that we can say to ourselves "I will be better presently"; but the pure mental suffering has this aggravation, that we know it will not pass without some change in the habitual total of the mind at rest.

I can even bear witness to a great and abiding grief at an early age when, with perfect health and nervous equilibrium unshakable even by long vigils week after week, all the usual symptoms of nervous distress were absent or infinitesimal from the first. Was the state of the sufferer therefore one of cold intellectual perception of a great loss? I think not: the recurrent metaphor describing it as a blotting out of the sun from the sky seems eloquent of emotion reaching down to the very roots of life. Is such a state to be called cold? Rather we might compare it with a fire that burns silently without crackling noise or roar.

I admit that this stillness is not characteristic normally of such an emotion as grief. In the ordinary course, when sorrow has its way, the bodily pangs are part of it, entering into it clearly or obscurely. Still it is as bodily pangs they are known. In the instance just now mentioned the absence of them was felt by the sufferer to be odd and uncanny, so that again and again the

reflection occurred:—"How good it would be—yes, almost good—to be physically prostrate and broken down in order that there might be something from which to recover." But recovery seems hopeless when there is no physical ill to throw off, when one sleeps soundly, feels hunger and thirst in regular course, walks erect, and is conscious of vigorous life and health in heart and lungs and muscle and nerve.

It is not, of course, here denied that there is some physiological condition or other going along with the psychological condition of emotion. That question need not be raised at all. It is quite sufficient and much better to discuss the point at issue—at least, in the first instance—from a strictly psychological point of view. I would be understood to speak, therefore, in psychological terms throughout. In these terms a feeling is bodily if we know it or can discover it as having local associations, as bound up with the local signs otherwise known to us as our bodily parts. The feeling which we know without local signs is mental simply. If I feel grief in my heart or breast-bone or digestive organs, or as a diffuse distress all over my body, and not otherwise, then the theory under discussion stands. But if I feel it after careful attention no *where*, then the change is a pure mental change. My assertion is that even a strong, ordinarily body-shaking, health-destroying, emotion, like grief, may be observed also in the pure or almost pure mental state. Much more can the same be said of its opposite Joy and of the subtler emotions of Beauty and Reason. In the latter, indeed, *i.e.*, when the pleasures of Beauty and Reason entrance us, there seems to be a distinct withdrawal of attention from the bodily organs; a silence falls on all the organic sensations and the lower senses too, all expression is concentrated on the eye or ear. But to these let us return presently. On our view such emotions will show as the most characteristic. Only it is better to fight Professor James on his own battlefield first.

Besides Grief, other violent emotions are Fear and Anger. Probably it is in the nature of things that these should be more explosive than Grief. Each is indeed an Instinct as well as an Emotion. Professor James's formula for the genesis of an emotion is:—Object, Instinctive reaction, Sensation of this reaction making the Emotion: but the instinctive reaction may consist of one or other or both of two parts: (1) instinct proper, tending to a purpose, as when flight follows on the perception of an angry bull; (2) instinctive reactions, resulting in complexes of sensation, as the palpitation of the heart and trembling of the limbs which may occur on the same occasion. As (1) and (2) shade into one another, and overlap, so do instincts shade into and overlap emotions, and it is obvious

that some emotions are more largely compounded with instincts than others. In pure Grief there is nothing to be done, except, indeed, to bear it bravely. In all strong natures the instinct to do this shows itself at once as an immediate stiffening of the will, which, curiously enough, results in counteraction of the prostrating effects of the concomitant nervous shock, so that where the shock prevails the stricken man crouches and is bowed down, but where the fortifying instinct prevails he walks more erect than before. But apart from this, which may, perhaps, be counted a secondary instinct, Fear and Anger may be contrasted with Grief, as emotions compounded with primary instincts, in the one case of shrinking, in the other case of resistance. According to my view, therefore, there ought to be discernible in Fear and Anger three constituents: (1) the instinct; (2) the central emotion; (3) the bodily disturbance. I make no assertion that this is the order in which these constituents appear in experience. On the contrary, it seems to me that the order of appearance is variable, and that the states themselves are capable of existing with a good deal of independence, a vanishing quantity of one with a maximum of the other, for instance.

Of violent rage and violent fear, such as we find described from the outside by Darwin, Lange, and others, I do not pretend to have any subjective knowledge. But the best test cases will, perhaps, be found in milder forms of the attack. Quick-tempered friends tell me that, on provocation, they answer back first, before thinking or feeling anything, a power which for my part I greatly envy, so serious is the effort of getting one's whole mind under way which anything of the nature of deliberate resentment requires. In the quick-tempered, anger is mostly instinctive resentment, and soon over. In another, instinct counts for little, but organic disturbances abound with no great stir in the mental sphere. Others, and they, I submit, are the really angry ones, experience a great disturbance of the habitual images and ideas in which, for the time, visions of injury suffered by self, and even a set-off in injuries to be inflicted on another, occupy the foreground of consciousness, and are gloated over by a fascinated attention. And these differences in the proportion of the anger-constituents are differences, not only in personal character, but in circumstances as affecting the same character.

As in Anger, so in Fear, the bodily characteristics are partly instinctive, partly expressive of nervous shock. The instinct is to shrink or turn away, just as the instinct of courage is to stand firm. These two, of course, frequently co-exist, as when one goes on steadily to do a thing while consciously shrinking from it all the while, both movements being equally instinctive. Danger incites to advance as well as to retreat. I am very familiar with this double

instinct in minor ways. One chooses the difficult course (and for no ulterior reason), and yet all the while shrinks from the imagination of it, or *vice versâ*; Instinct advances, Imagination retreats. I always feel this, more or less, about the prospect of bicycling across town through the crowded streets. I know I can do it, and I know I will enjoy it, and I am quite sure that I am going to do it; and yet there is some slight touch of vague uneasiness and imaginative shrinking, a little like what one feels in the dentist's ante-chamber. Now that vague imaginative shrinking, so slight in such a case as to awaken no instinctive reaction whatsoever, is of the nature of the pure emotion of fear. No effect in action, no effect in bodily shakings go with it, but it is not a pure intellectual state. Indeed, the intellectual perception takes an opposite line, with assurances of sufficient ability and even enjoyment. No doubt it is the veriest ghost of the full-bodied emotion, but the essence of the feeling of fear is there, slight though it be, *a discomfort in the percipient self with aversion of attention from the discomforting group of images*. So I start on my ride with my mind turned away from the imagination of crowded streets and noisy traffic, although presently I will turn it to the reality with fair enjoyment of the pleasures to be found in all concentration of will and attention. When actively engaged, of course, there is no time for anxiety.

The prospect of having to speak in public affects me in a very similar manner, and in this case the physical symptoms used sometimes to be added up to the moment that the plunge was made. But of these it must be said, as against Professor James's theory, that they always made themselves known for what they were:—palpitating heart, shaking knees, and sometimes nausea, from all of which the imaginative uneasiness, which is here called the emotion, stood out quite distinctly.

The independence of these physical effects comes out very clearly in a certain kind of experience which is probably common enough in mountaineering adventures. There is a big, difficult mountain to climb, combining many elements of risk; it may be too difficult; it may be too big; you may get frost-bite; you may lose your head on the precipices; in a dozen ways it may prove too much for you. Are you nervous? Well—no; there is a little anxiety as to all these points, but the project is dear, and the prospect exhilarating. You are not driven on by the love of glory, as the non-climber might allege, but by the joy of the doing itself. But you are not naturally hungry, and you feel rather ill. Neither supper nor breakfast are good to the taste, though you probably are wise enough to eat them, either from a sense of duty or to keep up appearances. Failing these, perhaps you think yourself attacked by "mountain sickness," give up

the attempt, and climb no more. But it is not mountain sickness; it is only the nervous distress concomitant to fear. The food, if you take it, does not disagree with you, and when the first rocks are climbed, you begin to be better. With every thousand feet ascended, the "mountain sickness" dwindles more and more.

The same experience is well known to candidates at important examinations. There is no conscious fear, only a little anxiety, but one feels an illness like the sickness of the sea. The sight of pen and paper and the first onslaught on the questions act as an immediate cure.

Now, the point to which I wish to draw attention here is that these physical symptoms, whether there be much or little fear combined with them, do not appear in consciousness as part, and in the first case not even as consequences of the emotion itself. They are quite separate from it, known simply as definite forms of physical distress.

One more instance to illustrate this fact of independence between the physical and the mental effect. Bathing in a solitary spot in a stormy sea, and with no knowledge of swimming, I lose my footing. The next two or three seconds are spent in the effort to get it back—entirely so spent, with no consciousness of thought or feeling outside the perception of loss and the purpose of recovery. Soon the purpose is achieved, and then I notice with surprise that my heart is beating wildly, from which, and solely from which, I conclude that I have had something of the nature of a fright. Real fright it was not: that takes probably more time than nervous shock, and my mental energies were all engaged in the simple purpose to be accomplished. I find from others very similar accounts as to the inhibition of the emotion by concentration on the instinct of preservation; but the point that specially interests us here is the presence in consciousness of the nervous without the emotional shock.

It is in these painful emotions that Professor James finds the stronghold of his theory; but it seems a curious omission from his discussion of the subject that he does not show how the theory applies to the pleasurable emotions which are their opposites. If it be true at all as a wide-reaching principle, it must be true for Joy as well as for Sorrow. What, then, is the characteristic bodily expression of Joy, and how far is Joy the complex of Sensation corresponding?

We may first note that great and sudden Joy sometimes produces organic disturbances not very dissimilar from those produced by great and sudden Sorrow. The new and unexpected when it affects our personality in some profound and vital way is always apt to produce nervous shock by the mere magnitude and force of the

disturbance, and shock as such is physically painful. Faintness, palpitation, impeded breathing, sickness, and general nervous distress—all these are symptoms that may for a brief time be present with Joy, because the joy is accompanied by great nervous excitement running wild through our members. Pleasure and pain come strangely near each other, as romance writers frequently have occasion to remark. Now, if these painful sensational incidents are to be counted, not simply as part, but as the essential part of the emotional complex in Sorrow, why should they not be so counted in Joy?

Let us suppose, however, that the destructive nervous shock has passed, and look for the state of general bodily sensation then corresponding with Joy. What is it but the sense of feeling very *well* and vigorous? Health is indeed a most excellent imitation of Happiness. A thoroughly healthy person, with strong heart and lungs, a perfect digestion, plenty of red corpuscles, and no obscure pains in his cœnæsthesia, is sure to present the *appearance* of Happiness to his friends. Nevertheless, without under-estimating his blessings, the fact remains that his consciousness of health is not the same thing as the emotion of joy. Joy promotes health, and health enhances joy, but the most delicious cœnæsthesia of health may exist (in youth more especially), in the absence of rejoicing, and an aching body may co-exist with a glad soul, whatever the true analysis of a glad soul may be.

So far we have considered only that group of emotions which centre in the weal or woe of our own personality. The sympathetic emotions are extensions of these to some other personality substituted for and felt like our own. All these may be called Emotions of Personality; and the accompaniment of complex bodily sensation seems to be peculiarly prominent in them, as compared with emotions bearing less on personal life. Professor James speaks of these others under the head of the subtler emotions, and, while he appears still to believe his theory in their case, he admits that there is less certainty about its truth. I submit, however, that if his theory is to stand, he is bound to fight for it on this ground no less than on the other. He asserts that if we abstract from the strong personal emotions all related bodily sensations nothing is left but a cold intellectual perception. I have attempted to test this assertion by enquiring *whether in these cases the emotion waxes and wanes with the bodily effects*. My own evidence goes farther than this indeed, but we may be content to rest the case on the negative answer which I believe most persons of considerable emotional experience would give to this modest question. But we are entitled to go further and say to Professor James (and if I understand him rightly he will not be averse to the

inference), that if in these cases there is no emotion when there is no sensational reaction, then states without sensational reaction must be reckoned as cold intellectual states throughout. If, then, we can show any well-marked emotional state from which conscious bodily reactions are normally absent, the theory as such falls to the ground, having done indeed the excellent service of calling attention to an important series of facts. For this purpose let us consider the Emotion of Beauty. Let us also carefully keep in mind, as Professor James sometimes omits to do, the distinction between the group of sensations that go with the perception of the object exciting the emotion, and the sensational reaction, if any, following such instinctive organic disturbance that may take place.

Fill the eye or the ear with a sufficient variety of pleasurable stimuli—an Alpine scene is the example that rises to my mind,—let the attention be concentrated on these while at the same time the rest of the mental content is stimulated generally. Sensation active without—imagination seconding it within—all the mind absorbed in the contemplation of some whole—perhaps no more than a visual whole—in which unity of composition prevails over great variety of detail, so that there is multiplicity without dissonance. Dissonance is ugly, and the absence of multiplicity is dull. And so a composite unity of pleasurable sensations is the formula for beauty accepted by the psychologists, and may be generalised to include other multiplicities than those of sensation.

But this is only an intellectual formula. Is there an emotion *per se* corresponding to it? I do not hesitate to answer Yes, and to hold a consistent view of all emotion accordingly with which view my experience corresponds. But first let me return to my concrete example—the beauty of the Alpine scene—to make two remarks:—(1) That bodily stillness is a characteristic of rapt admiration, a fact which I imagine most observers have observed; (2) a fact which I have not seen noticed, that beauty conduces to a wonderful soundness of sleep, which seems to me to follow directly on the harmonious state of mind maintained continually from day to day in the presence of beautiful scenes. This is certainly one indication, among others, that even the emotion of beauty has pleasurable bodily *consequences* more or less remote, but they are consequences only. A mind soothed into a state of harmony is favourable to the restoration of that bodily harmony which is health. The characteristic mental symptom of this is unconsciousness of the bodily organs with a consequent delicious sense of spiritual freedom—no distractions of attention from the objects of voluntary contemplation—which, although obviously quite distinct from Joy and the Emotion of Beauty, is promoted by these, is favourable to them,

and even forms part of their normal concrete total when in full tide. Indeed, in the case of Beauty, its idea, as defined above, implies that a jarring note from the body would mar its harmony and mingle clay with the gold. In rapt admiration, attention is so withdrawn from the organic Self that we become unconscious even of our limbs, though in a condition that with an ordinary distribution of attention would be found full of pain. Indeed, so normal a concomitant of æsthetic Joy is this withdrawal of attention from the bodily self as a whole, that the soothing and even curative physical effects above-noted may, with some probability, be put down to this cause. Immunity all day long from disturbances originating in the brain will tend to make a restful body when night comes. Contemplative concentration of attention away from bodily disturbances will tend to make a restful brain prone to sleep when the word is given. No medicine is more wholesome than forgetfulness of the cœnæsthetic self.

To this end contribute, not only the Emotion of Beauty, but all the emotions turning on Objective Interest, of which it is one. These, which might be called the *objective* emotions, to distinguish them from the personal emotions, may be further distinguished as (1) the Emotions attending operations of Reason; and (2) the Emotions of the objective Imagination, Beauty, Wit, and Pathos. It seems doubtful that Plot interest should be called an emotion: it is just the pleasure of exercise applied by way of the constructive imagination, and is only one of a group, for all of which it would hardly be worth while to find names.

So far as I can see at present, the rational emotions are the imaginative emotions over again, but applied to a different kind of intellectual material, and by that difference more tinged with solemnity of tone, more rapt from subjective considerations and bodily expression. This sense of greater weight and solemnity seems to be the subjectivity (the feeling aspect) of our consciousness that we are here dealing with things of universal import, and there is no room for that play of individual preference which is allowable in imagination, and gives its pleasures their peculiar flavour of gay irresponsibility. I may not think what I please: I may not do what I please; but I may imagine what I please if only it comes into my head. I do not say that I ought, but only that I can—there is nothing in the structure of the educated human mind to prevent me. Educate away this freedom by over-bridling—reduce Imagination to be wholly the bond slave of Reason, and the differences between the two groups of emotions tend to disappear, Beauty takes on the tone of rational satisfaction in a consistent whole—a very full tone in its way—Wit, with wings clipped, degenerates into dialectical neatness,

and Pathos, bereft of its tender play of free imagery, contracts into a grievous incongruity, with the hard relentless pressure so familiar to the thinker as the subjective tone of the inconsistencies which he cannot unravel.

Or, looking at this connection from the opposite point of view, suppose the gay temper of imagination is carried into the affairs of thought. The irresponsible *litterateur* turns his attention to Science. To him the all-embracing consistency of some epoch-making generalisation is simply a beautiful thing: it appeals to his good taste. But he has no sense of the religious care with which all the facts have been gathered up into it. In imagery, ugly things can be got rid of by simply leaving them out, and so the *litterateur* is apt to carry his airy sense of liberty into the upper traits, and feel about Truth as he feels about Beauty—that it is very charming, and pleases his fancy greatly. Still more is he characteristically at sea in the region of dialectic; thesis and antithesis affect him just like any other pair of balanced incongruous ideas. He plays with them pleasantly, enjoys their exquisite balance, and has no idea of a serious effort to reconcile them. All the clubs of London are very familiar, no doubt, with this kind of dialectic pleasure. The real thinker's fine sense of a dialectic developing towards an ultimate harmony is a very different matter. And continuing the comparison, intellectual contradiction is just pathetic to our *litterateur*—except that it is a very thin sort of pathos, since although in this imaginative objective pathos there is by supposition no occasion for sympathy, it seldom exists thus isolated as a fact, and in imagination sympathy is at least suggested.

Just as the Emotions of Objective Imagination, being in themselves vivid and clear, form a suitable basis from which to inspect the more obscure Emotions of Reason, so do they throw a steady light on the complex and tangled mass of Personal Emotions, the three simple types of which correspond to them. The limits of time press, and I will not attempt to do more than indicate general considerations. The Personal Emotions, apart for the moment from sympathy, are those of which the subject moved is also the object on account of which it is moved. Common language makes the distinction—I admire IT—I enjoy MYSELF. In Beauty the multiple satisfaction which satisfies further as free from dissonance is an IT. In Personal Joy it is a ME: something good has happened to ME. This is the difference. What then is ME, and what has happened?

This first question has been asked and answered before, and it is no part of my business to take up your time with it now any more than is necessary for the development of my argument.

My personality, as experienced by me, includes no doubt, though it is much more than, a certain familiar cœnæsthetic bundle, any changes in which would certainly be felt as changes in me. It includes a familiar group of habitual thoughts,—feelings, desires, a complex strand of experience running through all the types of consciousness, and realised as always in all its parts within reach of an attentive effort. I picture the idea of it to myself (knowing that this is only part of the truth, but a useful symbol of the whole), as centred in a certain constantly-recurring group of images—myself doing, speaking, thinking, feeling thus and thus in such and such circumstances. Closely bound up with these are a whole troop of other images—memories, hopes, beliefs about other people and the world in general. With these, and in these, my life is to be spent. Here is *Self at home*, turned in on self, living in its own accustomed world. Self abroad is hard at work observing the objective world. But sit in your arm-chair, with your feet on the fender to rest, and presently your thoughts trend homeward and wander in that inner world, be it for pleasure or be it for pain. The scenes of childhood, faces of friends, the music of old songs—such abound in the imagery of its background, a dim sense of all the epochs of personal experience hang about it vaguely, and, if you are happy, probably dreams of the future occupy the foreground. And if you are a social person it is full of company—not necessarily many—it may be one much.

The home of Self is this inner world, and the welfare of Self depends much on the goodness of its condition. If this home of thought be shattered or distraught, we have the grievous spectacle of a homeless Self, living in the objective world to escape the falling spars—attention concentrated on objective interests.

Sometimes, especially in early life, there is not enough variety in this inner world; and then we count it dull, and suffer the pain of vacancy, or gloom. Sometimes events occur which destroy its harmony, and throw it out of gear; and, if anyone will sit down and analyse the occasion of a great sorrow, he will find that this is what has happened to him, and that the central sore spot of his pain is the ever-recurring contradiction between the imagined old world to which he clings, and the new state of things to which reality ruthlessly summons him. He wakes in the morning in his old place, and immediately the new one rises up before him, blotting it out. Thus, then, are two causes of suffering at work—the gloom of loss—emptiness—when he sees his position steadily, and the sharp pang of negation when the lost good, having shaped itself in imagination anew, is presently confronted by reality's fierce denial.

I must not pursue the subject farther. Already I feel that I have

trespassed seriously on your time, and the developments of the subject which occur to me do not promise a speedy termination if I gave myself a free course. With some fear, not unaccompanied by trembling, knowing that such attempts are fraught with danger, I append a scheme indicating the connection of some of the emotions. Detail in such schemes is, I believe, to be avoided, the possible varieties being so great that the main lines are apt to be obliterated by them. Reading horizontally, the first line refers to the reactions of the personality on objects described as good, while the third line refers similarly to reactions on objects described as evil. Intermediate between these are the reactions on mixed objects of uncertain or more especially inconsistent character.

It will at once be noticed that I have put Pathos into what seems to be the proper place for Ugliness. My defence may not be worth much, but I *feel* that Ugliness does not yield an emotion of sufficient weight to compare with the emotions of Beauty and Wit. Pathos has that weight, and is opposite to Beauty, the connection becoming more obvious with Wit to complete the trio. Ugliness excites emotion of the pathetic type if it rises beyond the stage of a mere jar of the senses.

SUBJECTIVE
PERSONAL AND SYMPATHETIC.

OBJECTIVE.

MIXED WITH INSTINCT.	COMPARATIVELY PURE.	Of IMAGINATION.	Of REASON.
Desire.	Joy.	Beauty.	Consistency.
Wavering, Fear, and Hope.	Anxiety and Suspense.	Wit.	Dialectic.
Terror, Anger, and Fortitude.	Grief.	Pathos.	Contradiction and Doubt.

To the first class, reading vertically, belong all those emotions compounded with instincts for which the truth contained in Professor James's theory is at a maximum, since in these the whole condition connoted by the name does not exist without the presence of the sensational reaction. For the second class it is much less true; they can and do show themselves without it, but it is normal that they should involve the bodily as well as the mental Self. And this *a priori* is what we might expect, *i.e.*, that when

Self suffers much at the centre, all the consciousness that is normally part of it should be shaken through and through.

On the other hand, the objective emotions offer a haven of consciousness in which one may still be moved, but without the massive and oft-times turbulent background of organic reaction. And, indeed, it will not be unknown to many who have suffered the agonies of anxiety and grief that a partial escape from suffering can sometimes be made by carrying the fatal disturbance of Self that caused it into the higher objective courts, to be made there an object of imaginative activity, or even the subject matter of thought. Grief looked at objectively becomes pathos with its delicate play of imagery in the variety and activity of which there is some relief. Anxiety objectifies itself and finds the play of comedy in its contradictions—a contrariety in both cases held in solution: this is a great relief, because anxiety precipitates itself in grief more readily than wit precipitates itself in pathos.

The poet escaping from the crushing weight of personal sorrow into the lighter region of imaginative woe, or distilling the humours of fancy out of troubles less certain—this is a familiar figure in the portrait gallery of History. So Tennyson in his great poem of sorrow tells us of

“The imaginative woe
That loves to handle spiritual strife,
Diffused the shock through all my life,
But in the present broke the blow.”

KANT'S TELEOLOGY.

By CROMPTON LLEWELLYN DAVIES.

PRE-KANTIAN Philosophy had come to a halt before two questions—How mind can know things, and how things can be causally connected. The rationalist method could not explain how the *a priori* conceptions of Substance, Causation, &c., could be known to have application to things; the psychological method could not explain how the subject could overleap the prison walls of his own consciousness and exchange his play of presentations for a world of causally related objects. Knowledge of an objective world was represented as either a miracle or an illusion—either a correspondence ordained by God or a fiction of imagination; or rather, it remained for both the rationalist and psychological method an ultimate fact for the comprehension of which they had no adequate conception. Kant showed that the two questions of the possibility of knowledge and of Causation, when rightly understood, were one and the same; that if they are treated in isolation they cannot be answered at all, but that if they are combined they give an answer to one another.

On the one hand, the utter scepticism which is the outcome of the psychological method is impossible. Thought cannot commit suicide, but in the very act of denying or doubting itself asserts itself. A self-conscious thinker cannot think himself into a chaos of unrelated presentations. The combining or organising agency which a reasoned scepticism must always sooner or later invoke is nothing but the power of apperceptive or self-conscious spirit which scepticism sets out to explain away. On the other hand, Kant showed that the indestructible activity of thought has an inseparable correlative in a world of objects systematically related to one another. Apperceptive or self-conscious spirit cannot support itself upon a diet of chaotic fleeting unrelated presentations any more than it can be born from them; it must have a world of solid fact to get its teeth into—a world of objects permanent through their changes and all mutually determining and determined by one another as to their changes. We can have no experience which can be conceived or discussed to which the conceptions of Substance and Causation are not necessarily applicable. In the particulars which the psychological method assumes, the framework of these general conceptions is necessarily imbedded. General conceptions are not a fiction of imagination; Causation cannot emerge out of an experience in which it has not

been present all along. On the other hand, thought is not separate from things and miraculously brought into correspondence with them, but rather is immanent in them and constitutive of them. We have self-consciousness only in so far as we have experience of a world of objects permanent through their changes and all mutually determining and determined by one another as to their changes; and the world forms such a coherent system of objects only in so far as it is the experience of self-conscious spirit—only in so far as it is pervaded by the unifying power of Apperception, held together as a system of objects related through the Categories. Kant declares that we can see the necessity of the determining judgment by which objects are related according to the categories of Substance and Causation or Reciprocity as all mutually determining one another, because we see that without such judgment experience would not be possible at all. We see that the particular data of Sense must necessarily stand under the general conception of Understanding—must conform to the universal law of Nature—because otherwise they could not be known as a part of Nature. We have insight into the necessity of the general conception because it is the dress in which alone any occurrence can enter into the presence of supreme Apperception; because it is the subject's thought of unity immanent in and constitutive of the world of objects.

But it is not quite so simple as that. In the first place it became apparent to Kant that if the category of Causation, or pure Conception of Understanding, or bare thought of Unity is to have any significance, it must be schematised as the relation between objects as co-existent and successive in space and time or the forms of Sense. He declared that the knowable permanent characteristic in objects was their materiality; and that the changes of objects which could be known as causally determining one another were their motions in space during time. According to Kant we must have knowledge of the laws according to which bodies mutually repel and attract one another, and we can have no other knowledge. From this dogma it followed, first, that the object can never be fully known, because when we attempt to grasp it, it must always extend itself into an endless series of spatio-temporal determinations; secondly, that the apperceptive subject is unknowable, though its activity is involved in the possibility of a knowledge of objects. For the subject is not an object constituted by the categories, but by its own activity constitutes objects through the categories. The conceptions of Substance, Causation and Reciprocity, by which the subject determines objects, are (when interpreted as matter and the laws of motion) inadequate to determine the subject's own character and activity.

But something further still was found to be requisite to make experience possible besides the activity of the apperceptive subject and the categories or the relations of co-existence and sequence in space and time. To use Kantian language, it is necessary not only that the categories should be schematised as co-existence and sequence in space and time, but also that appropriate empirical data should be presented through the forms of space and time. For it is possible, not indeed that spatio-temporal events should be undetermined by one another, but that each should be so different from the others (having no discoverable relation to them except its position in space and time), that they could not be grasped under any rule of change. Events must have some differentiating characteristics if we are to know them at all, but on the other hand they must not be too different if we are to know them as causally connected.

But according to Kant, the specific difference in the character of events was an empirical datum into the necessity of which we could have no insight. We cannot see why the empirically given manifold of Sense should be such as to allow of generalisation. Hence all the trouble with Kant's Ideas and Noumena. He saw that the method of causal explanation, always on the track of an interminable series, could never attain to completeness: the complete explanation of any change was hidden beyond all knowledge in the Noumenon. And while the causal method led away to the unknowable Noumenon at the finish, it rested on the incomprehensible Idea at the start. Reason—the faculty of Ideas—must prescribe certain principles for the guidance of Understanding in determining the data of Sense before the category of Causation can be applied. We must assume the homogeneity, specification, and continuity of the empirical variety of Nature; and only through the thought of the Noumenon (which teaches that causal explanation can never be completed in the world of our experience) are we enabled to see that we can go on searching for causes endlessly.

Kant, therefore, has to go back on himself and declare that a further kind of judgment is requisite if experience is to be possible. In the *determining* judgment he still says that we start with the general conception and find particular data necessarily determined *a priori* by it. But in the *reflective* judgment, on the other hand, we have to start with the particular and find the appropriate general—the law under which we can subsume it as an empirical fact. Now, for all that we can know *a priori*, particulars might be infinitely various. We can indeed see that all objects in Nature must stand under the causal law by an *a priori* necessity; but objects, although necessarily connected, might, for all that we can see, be so bewildering in their diversity that reflective judgment would be unable to gene-

realise upon them—we could not determine which event was causally connected with which. Consequently, if Nature is to be known as a system of laws (and it cannot be otherwise known), judgment must assume (as a principle *a priori* necessary for its own working) that the empirical manifold or variety of sense is such as can be subsumed under a system of empirical laws.

This postulate of reflective judgment—that Nature in its contingent variety should form a systematic or comprehensible Unity—is, according to Kant, the teleological view of Nature. The need for this postulate—for the teleological standpoint—arises from the contingent element in Nature, which is due to our dependence upon the data of Sense. Our faculty of knowledge being partly rational or active and partly sensitive or passive, our knowledge of Nature is a blend of the necessary and the contingent. The character of the variety of Nature in virtue of which it forms a systematic whole of more or less general laws, is for us contingent; yet we must assume Nature to possess such a character, if it is to be knowable. Under these circumstances we must necessarily assume that the variety of Nature is *adapted* to our faculty of knowledge. But this conception of Adaptation does not, according to Kant, constitute Nature as the Category of Causation does, or enable us to assert anything as to the character of natural objects; it only prescribes how we must regard them with a view to making our knowledge of them systematic. Nor must we fancy that we have here any valid conclusion to the existence of an Intelligence apart from Nature, to whose design we can refer the systematic and knowable character of the variety of Nature. We have only an assumption which enables understanding to proceed in its search for causes—the presupposition of a mechanical, and not the basis of a teleological, explanation of the details of Nature. But although Nature in itself cannot be judged teleologically, yet in its relation to our Understanding it must be so judged. Depending as we do upon the contingent character of the data of Sense for the possibility of knowledge, we must regard Nature “as if an Understanding, not our own, had arranged it with reference to the needs of our faculty of knowledge, so as to make possible for us a system of experience according to particular laws of Nature”; or, in other words, we must assume that it is organised throughout by the Idea of the whole.

This result is reached by starting from the contingent element in our knowledge of Nature: we find that the determining judgment needs to be supplemented by the reflective which postulates that the empirical variety of Nature is adapted to our Understanding. If we start, on the other hand, from the necessary element in our knowledge of Nature, the *a priori* thought of unity, we shall reach a similar result in other words: we shall find again that the deter-

mining judgment requires to be supplemented; that the constitutive Category of Understanding needs to be reinforced by the regulative Idea of Reason.

We begin with the old statement that objects are known in so far as they are grasped as causally connected through the determining judgment. But to judge one event as causally connected with another is not to give a complete explanation of it: the cause to which we refer any event immediately itself requires a cause itself, and so on *ad infinitum*. Hence arises the Idea of a thorough and complete synthesis such as can never be reached by any application of the Category of Causation to the data of Sense; a unity of differences which, if our knowledge is restricted to the discovery of causal laws in virtue of which one object is externally conditioned by another, and that by another, *ad infinitum*, must remain for us, as Kant declared, an unattainable Ideal, but which is a necessary transcendental principle, requisite both to incite Understanding to its task and to guide it towards the goal of the systematic unity of all causal connections. When we try to explain any event causally we are led on from cause to cause, in the endless task of attempting to grasp its uncaused cause—the totality of the events which determine it. For no event can be completely determined until we have fixed its relation to the whole of possible experience. This, Kant proves, the causal method can never do; but the Idea of the totality of experience, though entirely beyond our comprehension through the Category, is involved in the possibility of all search for causes, as the assumption of the continuity or affinity of all the varieties of Nature—their intelligibility as comprehended and articulated in a systematic whole.

It is clear that all attempts to grasp the world as a whole under the conception of Causation must fail: that conception, being only capable of expressing the relation of objects as outside and before or after one another, cannot be applied to the Totality of Experience which cannot be related to anything outside or before or after itself. And yet the complete causal determination of any change involves the comprehension of the Totality of Experience. Thus Reason enables us to see that the object cannot be fully known by Understanding through the Categories; that behind it there always lies the transcendental object = x , the thorough and comprehensive unity which alone would satisfy the demands of Reason, which alone would harmonise with the Unity of Apperception. If we could once attain to this absolute unity, we should know the object as it is "in itself"; there would be no unknown residue lurking behind. This thing in itself or Noumenon, according to Kant, lies for ever on the bounds of our knowledge, because we must receive the data

of experience through Sense, so that there always remains a contingent element in our knowledge; or, in other words, because the only conceptions which we can use in synthesising the data of Sense are the Categories of Mechanism, which determine only the external relations of objects to one another.

But this Noumenon or Thing in itself, which we can only conceive as an unattainable Ideal, is of interest, because, although we cannot grasp it or comprehend its possibility, we can represent it symbolically as the object of an Understanding different from our own—an Understanding, which being not discursive like ours, but intuitive, would not proceed from particular to universal, but would grasp particular and universal as necessarily united in a single act of thought, in which the causal chain, instead of leading away into the indefinite, would be summed up, and the systematic inter-connection of all objects known in its completeness. Cause and effect would no longer be separated and only contingently combined as in our knowledge; and at the same time the gulf which, according to Kant, is fixed for our knowledge between subject and object, self and the world, would disappear; instead of the subject supplying only the form or thought of unity and having to receive the matter of knowledge through sense, the subject would create both the form and matter of its own knowledge; and its knowledge would, therefore, be nothing but the perfect realisation of self-consciousness, the *νόησις νοήσεως* of Aristotle. For this intuitive or original Understanding the being of the object would be fully one with the knowledge of it; the known would be fully one with the knower.

In reflecting, therefore, on the possibility of knowledge from any point of view, we are irresistibly led to the Idea of God as the totality of possible experience, the absolute unity of thought and things. But just as Kant represented the Noumenon or intelligible object, the thought of which was implied in our knowledge of causal connections, as something beyond the bounds of our experience, as outside Nature; so also he represented the supreme Intelligence which we must conceive as the ground of the knowability of Nature as unknowable—as something external to Nature.

The conception of Adaptation belonged (like the transcendental subject and object) to a sphere outside Nature: it did not enable us to attribute any characteristic to objects in Nature. Still, none the less, it was a transcendental conception, *i.e.*, one of universal and necessary application, though it was only subjective and regulative instead of objective and constitutive. The necessity which we are under of thinking knowable Nature under the conception of Adaptation or conformity to End, carries us beyond Nature or the world of objects determined according to the Categories, and obliges us

to conceive a supra-sensible substratum of Nature, and, indeed, to conceive it symbolically as an End realising Intelligence. Now Kant had shown the emptiness of the conception of the Almighty Watch-maker. But he himself was committed (in words) to the theory that knowledge is only of mechanism, of the external relations of objects to one another. Therefore he insisted on the separation (for our knowledge) of subject and object, thought and things, Sense and Understanding; or, rather, on the contingent character of their unity. The result was, that God appeared as external to or separate from objects; and the harmony of the different elements of knowledge appeared to be due to the arbitrary act of a third party. Kant declared that, in face of the undeniably teleological aspect of Nature, we could do nothing better than re-erect the dummy Designer as a make-believe—nothing better than fall back upon the invalid conclusion that the given materials of the world have been adapted to an end, contingent to the materials so far as our knowledge of them is concerned, by the inconceivable fiat of an impossible Mechanician: though we know all the time that such a conception is inappropriate, since it is involved in the character of things as knowable, and of self as knowing, that they should be related with a more than organic intimacy and necessity in the absolute unity of the Intuitive Understanding. The conception of End, Kant impotently concludes, remains a blank wholly incapable of determination by theoretical Reason.

But that is not Kant's last word. He was fond of representing his work to be such a limitation of knowledge to the necessary laws of Nature as left room for the requirements of the moral and religious interests, and established in security beyond the assaults of knowledge, faith in God, and the consciousness of self as morally free.

We saw that according to Kant the self cannot know itself, because it is not an object in Nature. Instead of being a creature of natural law, the self makes natural law possible. Therefore, when the same I, in the guise of practical Reason, claims to be free to determine itself in moral action according to its own law, without regard to the motives of sense or the conditions of the natural world, it is impossible to dispute this claim to practical autonomy, on the grounds that the self is an object in Nature, and must conform to natural law. In the consciousness of moral freedom we first get assurance of the reality of the transcendental self (which as theoretical could only think itself as a mere blank), and in moral action the assurance that ends are being realised (though we can have no knowledge of them). In the same way Kant argues that theoretical Reason, which cannot prove the existence of God, cannot disprove his existence if we have any other grounds for believing in it. Now,

according to Kant, we find such grounds in the moral use of Reason, which we cannot disregard without holding ourselves unworthy of Reason, and which "resting throughout on the Idea of the Highest Good," leads us unavoidably to the conception of "a sole all-perfect rational primal Being," as the ground of the unity of all rational ends. Taking our stand upon the necessary unity of moral order, we are led to regard the Universe as a rational system or *Regnum gratiæ* of free moral beings harmoniously willing the moral law. And this teleological ordering of Nature is no contingent arrangement by some external power; for as speculative Reason was obliged to think the inner possibility of things as known to depend on their unity in the intuitive Understanding, so now, in virtue of the primacy of practical Reason, which requires the complete subordination of Nature to the one supreme will, which is the ground of the moral law, Kant would have us believe with practical certainty that the possibility of all things in Nature depends on their realising as a condition of their existence, the rational or divine end of the universe.

Kant thus flattered himself that he had succeeded in his rather dreary enterprise of establishing beyond all sceptical attack the validity of Mechanism and Morality; in having proved that we must have knowledge of mechanical causation and can have no other knowledge; that we ought to be, though we cannot say that we are, moral.

But he had done something rather different. For if we reflect on the principles which he introduced (Apperception involving the unity of the world according to the Category of Mechanism and the principle of teleological judgment or Idea of God, and the autonomy of practical Reason involving the Ideal of the Kingdom of Ends), we shall see that a junction of theoretical and practical Reason is imperatively demanded in the interest of both. Mechanism and moral will are no doubt opposed to one another; but they cannot be justified (as Kant tried to justify them) on the ground of their aloofness from one another, but only on the ground that in spite of their opposition, each has significance only as the activity of individual spirit uniting itself with, while distinguishing itself from, the world. It is certainly true that Teleology must be ethical if it is to have any meaning at all; we must judge the world according to our standard of worth—in the light of our practical ideal. But if we are to be able to assert with any significance that the universe is fundamentally a realising of worth, a harmony of rational ends or kingdom of grace, we must attempt to find some connection between the end of practical Reason—our ideal of worth—and the theoretical principle of End, which from Kant's point of view remains a blank,

incapable of determination. On the other hand, if we are to escape from Kant's position, which regarded knowledge of the self as impossible, and Nature only as knowable through the obviously incomplete synthesis of causal connection, we must recognise End as a principle of knowledge: in which case it may be possible to grasp Nature as constituted fundamentally by the same teleological principle (the activity of a spiritual whole), as that through which it is known: to find its parts standing to one another in that teleological relation (the union of all parts as existing through and for the whole), which binds the consciousness of self in a vital connection with the consciousness of the world. The result would then be that self-conscious spirit and the world, regarded as each realising its end in and through each other, would be grasped as fundamentally harmonious, and as realising the end of the Universe in and through their harmony.

Let us see how far Kant advanced in this direction. His work is so important, and yet so difficult to understand, because it effected such an important transition. His new conception of the activity of self-conscious spirit—theoretical activity as constitutive of causal law, and practical activity as autonomous or freely self-determining according to its own law in moral willing—contained the seeds of a Teleology which might regard the power of self-conscious spirits as that of God working in them, and the realisation of their individual ends in knowledge and action as the realisation of the end of the Universe. But the shadow of the past blinded him to the full significance of the teleological conception of the whole as present in the parts. He denied that we could comprehend the realisation by rational spirits of ends which were at the same time individual and universal. Self and the world, though proved to be vitally necessary to one another and united in a more than organic intimacy, yet stood apart. The Almighty Watchmaker showed his posthumous influence in the external aspect which Kant gave to God's action in adapting the empirical variety of Nature to suit the *a priori* categories on behalf of our theoretical interest, and in guaranteeing on behalf of our practical interest the *summum bonum* or allotment to Virtue of its deserved amount of Happiness. But the struggle between the old and new points of view appears most clearly when he attempts to apply his principles to the realm of organic life.

According to Kant, the conception of Adaptation, or conformity to End, is required in all judgments of experience: objects of Nature as forming a system comprehensible by us, must be regarded as grounded in an Idea. But a special application of this conception is required in a special class of judgments of experience, when we find not merely that the possibility of natural objects, as known by us,

must be regarded as grounded in an Idea, so that Nature as a whole must be judged teleologically; but that the possibility of certain natural objects themselves rest on an Idea, so that they must themselves be judged teleologically. The possibility of our having knowledge of organisms depends on our regarding them objectively as ends, instead of merely judging them according to the subjective or formal principle of Adaptation, which must be applied to Nature as a whole. Such a kind of Causation as we find in organisms in which all parts are reciprocally means and ends, and the whole is determined by the parts and the parts by the whole, can never be understood through the laws of Nature, or rules of mechanical interaction, which have regard only to the action of parts external to one another, and do not apply to the action of the embracing whole; and can only be understood if all the parts are regarded not as a mechanical aggregate, but as a living whole—as determined throughout by an idea in accordance with which all parts are combined in such a way as to serve as means to the whole.

Now we have here a most remarkable extension of the teleological principle, as Kant is well aware. "Ideas, for which no adequate object can be given in experience, can serve only as regulative principles in following out experience. The same, it is true, holds good in the case of Natural End (Naturzweck), so far as the ground of such a predicate is concerned, for that can only be found in the Idea; but the corresponding consequent (the product itself) is actually given in Nature, and the conception of a mode of Causation in Nature according to ends appears to make the Idea of a Natural End a constitutive principle. In this respect the Idea of Natural End differs from all other Ideas."

But none the less, Kant still insists that the teleological conception is subjective or regulative, not objective or constitutive: it is only *a priori* necessary as prescribing the way in which we, owing to our peculiar faculty of knowledge, must regard a certain class of objects. The only proper method of explaining organic as all other changes is through mechanical causes, and we may hope to make good progress in such explanation. But it will never be possible for us to dispense with the teleological conception as a guiding principle; we can never escape from regarding organic changes as all conspiring to an end in such a way as is only comprehensible by us if we suppose that the Idea of the whole has determined the interaction of all the parts. Kant asserts positively that no human reason can ever hope to understand the production of a blade of grass through merely mechanical causes. But since, according to Kant, knowable Nature is nothing but a system of mechanism, the ground of the teleological connections cannot be found in Nature:

we are for ever cut off from the possibility of knowledge of such teleological connection, though we must think it necessarily as lying in the supreme Understanding, which from every point of view we are obliged to conceive as the ground of Nature.

Kant's statement is most curious. We cannot comprehend organic changes except as the realisation of Ends, and yet we never can so comprehend them, and when attempting so to do must always fall back into the old illusion of external design. Kant would not be guilty of openly throwing over his earliest and his only love, mechanical causation, and was thus obliged to deny that we could know any end-realising activity in Nature—any teleological principle of connection as immanent in and constitutive of objects. He argued that the mechanical explanation of science could never dispense with the supplementary conception of Teleology; but denying that we can have knowledge of teleological activity in Nature he was always haunted by the shadowy conception of an intelligent mechanist pulling the strings behind the scenes. The teleological activity supposed to be located somewhere outside the changes in Nature could not be teleologically grasped as standing in an intelligible relation to them (the power of the whole operating in all the parts so that they are all mutually means and ends), but had to be conceived as operating in the spurious semi-causal way of compelling parts, separate from itself and each other, into a harmonious whole.

But Kant was all along laying the foundations of a genuine Teleology to take the place of the futile doctrine of Design. Thus in dealing with the conception of organic unity, he pointed out clearly its difference from the conception of the unity of a machine or a work of art. He argued that a thing must be judged as a Natural End when "its form is not possible according to mere natural laws"; when, therefore, "even the empirical knowledge of it as regards cause and effect presupposes conceptions of Reason"; when we must regard the parts as all being there for the sake of the whole; when we must regard the conception of the effect (end) as determining the causes (means). Now so far as this definition goes, the character of a work of Art is similar to that of a Natural End. The relations of the parts of a machine to one another can only be understood as determined by the Idea of the whole, and as all being there for its sake. But whereas in the case of a machine or work of Art, the connection of parts is referred to an external intelligence which combines them from without according to an idea to an end which is contingent to the parts themselves and which has reference exclusively to something outside them (utility to some other being); in the case of a Natural End or "organised and self-organising being," there is no external intelligence which determines the combination of

the parts and compels them to conspire to the unity of the whole, in a way which is contingent to the parts; nor is the end realised exclusively the utility or good of some being beyond them. In the case of a work of Art, the parts first exist independently of one another, and then are purposively combined into a whole; in an organism the parts depend for their very existence on being connected in the whole from the beginning. In a work of Art each part (*e.g.*, the hand of a clock), as regards its relation to the rest, must be explained as being there for the sake of the whole; in an organism, each part, as regards not only its relation to the rest but as regards its own particular form and existence, can only be understood as being there not only for the sake of but by means of the whole. In an organism the power which organises the parts is not external to them; nor does the end realised consist simply of utility to something else, but is the development and maintenance of the whole, which is immanently realised in each of the parts. The final cause is to be found in the combination of the parts in the whole, and all the parts as mutually creating and sustaining one another in the whole by means of, and for the sake of one another, each existing not only for, but through, the rest, must be regarded as all reciprocally means and ends to one another. We must judge that in an organism there is "nothing in vain"; every part must be judged as serving in turn by an inner necessity as both means and end. Hence, a purely mechanical explanation, however far it may be carried in explaining the interaction of parts, will never suffice to account for any feature of an organism; all the causes which we can discover as bringing together and modifying the materials of a living body—*i.e.*, all the rules of the interaction of the parts—must be viewed teleologically throughout. It is true that scientific explanation can advance only by such discoveries; but it can so advance only by resting throughout on the notion of organism or adaptation. The teleological appeal to the self-organising power of the whole is no causal or scientific explanation, any more than an appeal to the Watchmaker. So far Kant is perfectly right in insisting on the distinction between Science and Teleology; and if the science of causes were the only possible knowledge, it would be true that the conception of End would not be an objective or constitutive principle of knowledge. From the assumption that the only knowable relation between objects was the mechanical one, it would follow that their teleological relation was unknowable, and that Reason, if it attempted to deal with the situation, would have to fall back on the conception of external design and stand self-convicted of using a conception which it could see to be invalid. But the point to notice here is that while Kant argued rightly that Teleology can never take the place of scientific

explanation, he was at the same time showing the need of applying the genuine teleological conception to organisms, and of regarding them as self-determining wholes of which every part is both means and end, instead of regarding them as machines or works of Art, fitted together from outside to serve some purpose beyond themselves.

We can reach the same point with Kant by a rather different route, from which we shall see rather better the meaning of his refusal to allow that organisms can (from his own, *i.e.*, the causal standpoint) be known as ends. On the other hand we shall see once again the futility of the pseudo-teleology which he offered as the result of his principles, and shall find him once again expounding a genuine Teleology in spite of himself.

In exposing the vulgar "argument from design" which concludes to the Almighty Watchmaker, Kant had shown that it always started from the idea of the relative Adaptation of one thing in Nature to another, and that the assertion of such a relative adaptation involved the assumption of a Final End, and that none such could be asserted in Nature; that from no amount of adjustments could we conclude to an Adjustor, and from no amount of relative Adaptations or conveniences assert an absolute good. "To judge a thing by reason of its inner form to be a Natural End is not to hold it to be an end of Nature (Final End) that that thing should exist." We cannot assert that any object in Nature (regarded as a system of causal connections and relative adaptations) exists as an absolute end in itself; therefore, we cannot assert that other objects which are serviceable or adapted to it exist as means to it. Relative adaptation involves an interminable series, just as Causation does. The assertion of an absolute end carries us beyond the endless series of relative adaptations of which we must suppose Nature to consist into the region of the incomprehensible Noumenon or ground of Nature. Herein lay the rottenness of the vulgar doctrine of external Design, which depended for its significance upon the egoistic assumption that Man, as the crown and glory of Nature, was designed by God to be its Final End. According to Kant, Man, as a natural object, though he may be the most complex organism in Nature, is related to his environment like all other natural objects. As forming a link in the network of connections which are regarded as relative adaptations only in virtue of the principle of Reflective Judgment, he cannot be asserted to exist as the absolute or Final End for which all other objects in Nature exist as means.

But while rejecting the assumption that any object in Nature is its Final End, Kant was continually haunted with the Idea of such a Final End (just as the science of causes is always haunted by the Idea of the uncaused cause). Though in Nature "we reach no

categorical End, but rather the teleological reference of one existence to another always rests on a further condition," yet the conception of Nature as a system of relative adaptations irresistibly suggests the Idea of Final End, which can be thought as the ground and resting place of the whole tree of relative adaptations—an End which is no longer hypothetical, but categorical; which requires to be referred to no other End beyond itself as a condition of its possibility as an End. Now, we saw that, according to Kant, although theoretical Reason was unable to grasp the supersensible ground of Nature which it has to think as the absolute unity of an all-embracing Intelligence, in practical Reason or the consciousness of moral Freedom we have a guarantee of the reality of this supersensible ground and of its rational harmonious character. As moral beings, we belong to a world in which rational Ends are harmoniously realised. As members of this rational world of Ends we are not objects in Nature. As a natural object, man in turn conditions and is conditioned by all other natural objects; but as a moral being he is autonomous—free to realise his End in independence of all conditions of Nature; and the end of practical Reason—the realisation of its own freedom through willing nothing but the moral law—is an absolute End in itself, *i.e.*, does not depend for its possibility as an End on being referred to any End beyond itself. The moral will is absolutely good; man as a moral being is an End in himself: the question, What further End does he serve? can no longer be raised with any meaning. Here then, according to Kant, is an End which being beyond Nature and independent of all conditions in it, must be regarded as the absolute or Final End of the whole system of conditional adaptations or hypothetical Ends of Nature. Moral man, as an absolute End in himself, must regard himself as the absolute End of Nature.

But this jump to the moral will independent of Nature is no better than the jump to the design of the Almighty Watchmaker. Nature cannot be teleologically related to anything outside itself: the End of Nature must be fulfilled in Nature if at all. Moreover, Kant's pure moral will independent of Nature is just as blank an abstraction as the pure theoretical ego treated as separate from the world to which it is related in knowledge. Just as the transcendental self cannot grasp itself in its abstract purity, so the moral will cannot will itself in its abstract purity. To do our duty for duty's sake is as impossible for us as it is for the cat, by jumping round and round, to catch its own tail. The moral will, if it is to be anything at all, must will something other than its pure self. But here too, again, we find Kant himself showing us the way to a genuine Teleology in exchange for the spurious article which he still tries to force upon us

in his doctrine of the moral will as something outside knowable Nature. In his treatise *On the Idea for a Universal History*, he explains that the Idea of man as a moral being must be used as a clue in systematising the facts of History; that the course of events can only be grasped in its causal connections if we view it as instrumental to moral development and regard the conflicting sense-motives by which we explain the development of society as a progress towards the realisation of the moral Idea. This is an important concession. For, if sense-motivated action can be instrumental to the development of the moral will, then the absolute distinction which Kant before made between them must be broken down. Kant goes so far as to argue that in a life of rural simplicity and harmony the moral motive would not be present, and he shows how, from the development of selfish desires and the conflict of rival interests, men become roused to the consciousness of the moral Ideal. The moral will, therefore, so far from being wholly aloof from Nature and independent of the world of sense, can be traced as developing through natural conditions and out of motives of sense, and indeed could never have arisen except through such conditions.

Here Kant can no longer escape by saying that the teleological conception as applied to History still remains merely a guiding clue or Idea, which does not enable us to assert that Ends are realised in Nature. For we remember that when organisms were "given" as parts of experience so that we had to judge them reflectively as natural Ends, the reason why we were not allowed to judge them as Ends categorically was because we could not assert that it was the Final End of Nature that they should exist. But the realisation of the Moral Ideal, which Kant now admits can be traced in History, and which, therefore, is "given" as a fact in Nature, is the Final End of Nature. The Final End of Nature—the absolute good—i.e., the harmony of will of rational beings, each of whom finds his own good in the good of all the rest, and as an absolute End in himself treats all other beings as Ends in themselves—the attainment of Freedom or self-determination of the individual according to universal Reason—is connected without a break with the sense-motivated activities characteristic of all living things, as developing only through and out of them. Such activities then need no longer be judged only reflectively as Ends; in the light of the end of absolute worth they gain a reflected glory. "A supplementary reflux of light illustrates all the inferior grades, explains each back step in the circle." For the Ends realised through such activities differ not in kind but only in degree from the Ends realised in the fellowship of self-conscious rational beings.

This does not mean that we give up anything that was of value

in Kant's assertion of moral freedom. If we find all kinds of teleological activities leading up continuously to the moral will, it does not follow that the moral will can be analysed into animal instinct and explained as nothing more than it; rather the instinct which impels an animal, while it is scarcely conscious of itself as willing, or capable of discerning wherein its good lies, to preserve and reproduce itself; and the lower impulses which a man often follows, though conscious that he is not thereby attaining his true good, and that his true self is not identified with such aims, can only be explained by reference to and in the light of the higher development of self-conscious self-determining Reason, which masters all impulses and subordinates them to the realisation of the true good of self, the end of Universal Reason.

So, too, if the consciousness of self and a world of objects related according to scientific laws can be traced as gradually developing—as existing in various degrees of clearness—it will not thereby have been analysed into a play of isolated sense presentations. What Kant really did was to show once for all that no causal explanation can account for the causal principle itself; as has been made clear once again in recent times by J. S. Mill's attempt to find a psychological explanation of the causal principle, the result of which was to show that the ground of Causation does not lie in these or those invariable sequences discovered by induction, but in the uniformity of Nature, which has to be assumed as the basis of all induction. From the teleological point of view the circle has not the same viciousness: so far as there is a world at all, it is a knowable system all along; so far as a subject has an experience, it must be of (at least) causally connected objects. But the proof that Nature must be known as a systematic unity does not enable us to lay down that the only principle of systematic connection in it must be the laws of interaction of heavy bodies—does not amount to a proof that man has been armed from all eternity with the Twelve Categories, or that he awoke one day to find himself fitted with the complete set in working order, and that all his further efforts after knowledge must be confined to their manipulation under pain of being empty illusion. Kant was so pleased with having shown that the standpoint of physical science was a point of view from which there could be no going back, that he declared there could be no going further; and when he found that the teleological Idea was required to supplement the Category of Causation he attributed it to the imbecility of our Reason, our inability to sum up an unsummable series and grasp the object as unconditioned, as it is “in itself.” It remains true that teleological is not a substitute for causal explanation; true, also, that no causal genesis can be given for life and consciousness. This,

again, has been made clear in recent times by Herbert Spencer's efforts, which have shown that it is useless to attempt to reach from the scientific standpoint—from the generalisation of causal laws—a philosophy of development. The attempt to regard the whole world of lifeless matter, living organisms, conscious brutes, and self-conscious men as forming a single development determined throughout by the principle of fitness to surroundings and capacity for existence, involves a confusion of Science and Teleology which is fatal to both. No formula of causal action will cover the transition from physical changes to organic growth, much less to self-conscious spirit. So far we must agree with Kant. But if we are driven into Teleology, are we driven into the unknowable? If we dethrone Kant's idol, the thing in itself, and renounce the dogmatic pretension to decide that such and such conceptions are *a priori* necessary and constitute Nature, while others are makeshifts due to our dependence on the contingent data of sense, we need no longer groan at finding ourselves under the necessity of taking a teleological view of Nature or regard that necessity as a standing mark of the imbecility of our Reason.

Kant had argued well that all communicable or conceivable experience must be of a system of objects permanent throughout their changes and all mutually determined by one another as to their changes. These conditions are, indeed, satisfied in the science of matter in motion, but very inadequately. For, first, the permanent characteristic maintained through their changes by the objects of this science is merely their materiality, and about matter nothing can be said except that it is permanent. Secondly, their changes cannot be grasped as completely determining one another, for they lead away along a causal chain which ends only in the unknowable Noumenon, or, rather, round in a circle of reciprocity which can never be completed. The principle, in virtue of which the variety of the objects of Nature forms a system comprehensible under more or less general laws of reciprocal action, was hid with God in the Noumenon.

But the permanence and reciprocity which can be grasped only so imperfectly in the causal science of the motions of matter, come out much more comprehensibly in the teleological study of the character and activity of living things. A living thing has an individual knowable character which persists through its changes and in spite of the separation of its parts in space; and the parts all reciprocally determine one another as to their changes, being all teleologically determined by the whole, instead of leading away to an absurd pseudo-causal first cause or pseudo-teleological Designer. The inadequacy of the causal principle lay—first, in its inability to determine the permanent characteristic of objects; secondly, in its

postulating such an interaction (external) of objects as it could not grasp as fully reciprocal—such differences as it could not thoroughly unify. The teleological comprehension of a living whole grasps parts which are at the same time more specifically different (qualitatively as well as quantitatively distinguished) and more thoroughly unified—determining one another with more complete reciprocity; and the principle which makes this reciprocity of action possible is at the same time the principle which provides a knowable permanent, viz., the character of the whole. The knowable permanent character—the individuality of the whole—depends upon the fulness of the reciprocity of the parts: the whole is knowably permanent in proportion as those changes are all reciprocally determined. And while the permanent individuality of the whole is knowably manifested in harmonising its specifically different parts, so that they determine one another with more thorough reciprocity than merely causal units can do, it is also teleologically related to an environment, which has more knowable permanence and reciprocity than a merely causal unit has. In proportion as a whole possesses a permanent character and exercises a self-determining power throughout its parts, it must be grasped as functioning in relation to an environment of objects themselves possessing permanent character and exercising self-determining power—as existing in its specific character only in and through the specific character of other beings; as in the physical relation of male and female, and still more in the reciprocal relation between citizen and citizen, and between lover and lover.

Kant himself had really taught us the necessity of recognising the teleological principle in the world. He had shown that the category of Causation was a form of activity in the exercise of which self-conscious spirit was necessarily aware that in constituting a universal order of Nature it was exercising the power of a universal consciousness—was aware of itself and its object as embraced in the absolute unity of God. But if the unity of causal connection is the synthetic activity of apperceptive thought present in objects, much more so is the unity of teleological connection. Instead of resting its necessity on the limitations of our knowledge—on the fact that muscular action cannot be reduced to mechanism, or protoplasm be constructed out of inorganic matter by chemistry—we may regard the teleological conception of the determination of the parts mutually for the End of each, of all by and for the whole—as a genuine principle of knowledge constitutive of the world, its use being inseparable from the use of the causal conception, inasmuch as even in physical science the establishment of any causal connection rests upon the teleological ideal of the world as a whole whose parts all reciprocally determine one another, while in Biology and History, it is impossible to move a

step without always bearing in mind that causal explanation is only an attempt to connect forcibly isolated details of an indivisible process of development.

Causal connection—the connection of a series of changes under a law in virtue of which one is involved with others and determines them to occur—is the activity of self-conscious spirit in one act connecting the changes of the world with one another and with itself—thereby going beyond its own individuality and operating as universal spirit. This is a teleological activity of the same kind as that exercised by the member of an organism, which in performing its functions exercises a power which is more than its own—the power of the whole organism. In knowledge the teleological unity of a self-conscious spirit in grasping the world as a systematic unity, is exercising the power of universal spirit which comprehends subject and objects in its unity. Causal connection is only an imperfect form of teleological. Our knowledge is causal in so far as we treat the world as composed of isolated units, external to one another—in so far as we leave out of account the power of self-conscious spirit, which is one with the power of God; as when in physical science we abstract the object from its relation to the knowing subject, or as when in physiology we attempt to treat the parts of an organism as determining one another without reference to the power of the whole. From this standpoint, from which we are confronted with the interminable causal regressus which makes it impossible to give a complete explanation of anything, a knowing spirit cannot grasp the world completely as a systematic unity and, therefore, cannot grasp it as at unity with itself. We do not comprehend God as fully present in the world because he is not fully present in us. Till we exercise the full power of God we shall not be able to escape from the causal point of view which leaves knowledge imperfect. But though we are tied down to the causal point of view, we can see that it is nothing but an incomplete Teleology; that all knowledge is an effort to grasp the world as one in spite of, or rather in virtue of, its differences, and the knowing self as one with it in spite of, or rather in virtue of, its differentiation from it.

Self-conscious personality exercising the power of God is the foundation of all connection and forces, even where individuality and consciousness, development and end, are left as much as possible out of account. And in so far as we know the world as a teleological unity, we are teleologically at unity with it. Causal explanation is incomplete knowledge because it must always leave an unexplained residuum, each explanation requiring another *ad infinitum*: causal force is unintelligible because it is not our own power. Teleological power we can understand because it is our own; teleological explana-

tion would grasp the universe as a self-complete unity, as a whole in which all the parts would be so related as fully to involve and explain one another mutually. What remains from a causal standpoint the ultimate inexplicability—the principle of the relation between knower and known, and in a lesser degree the relation between the parts of an organism, is for Teleology the principle of all knowledge—the key to all truth and the criterion of its completeness—the principle of spiritual unity realised in and through the relations of specifically different units.

Thus Kant's two incomprehensible kinds of Adaptation (the "objective" and the "formal") fall together into comprehensibility. In accepting the objective principle of Adaptation as knowledge we get insight into the grounds of the formal principle. In so far as we can recognise Nature as a system of Ends we can recognise the power of God as the ground of the harmony between ourselves and Nature; because in viewing Nature as a unity of Ends we recognise our own unity in it, or, in other words, we recognise God's unity in it.

The world of our experience is not such a perfectly comprehensible teleological system. There remains the world of matter, where there is nothing but causal connection. In the realm of organic life there remains the causal determination of changes through natural selection; and even in organised communities, where the struggle for existence is mitigated, material conditions and the conflict of interests prevent the relations between man and his surroundings from being perfectly teleological. So long as we are pursuing our End or good in competition with others and realise it to the frustration of their end, so long as each is pursuing in co-operation with others a good which is anything else than the mutual good of all, we shall be exerting or suffering compulsion; we shall be using others or being used by them merely as means. Action is only fully teleological when there is not only community but unity of ends; when each realises his good not only in common with but in others; when all individuals are reciprocally ends to one another, the good of each being that of all the others, so that universal good is realised in each individual good; when each so identifies himself with the rest that in a sense he *is* the rest. But this is the practical ideal, which, according to Kant, was beyond our speculative grasp. We now see that it is identical with it. As the unity of individual goods is the ideal of action, so the unity of different self-determining individuals is the ideal of knowledge. As the practical ideal is the free realisation of the good of each individual in that of all the rest, so the speculative ideal is the complete understanding of the character and power of each part as being the character and power of the whole in miniature. In both cases,

certainly, an ideal; but, as such, the foundation of all knowledge and of all goodness. In some sense the ideal of the universe as a teleological whole, which we call God for short, is actual and comprehensibly present in all experience, though in various degrees of fulness—feebly enough in the abstract world of matter in motion whose parts externally determine one another mutually according to causal laws; more fully in the power of an organism which utilises its environment to develop, maintain, and reproduce its form, and is in turn conditioned by it; most fully in the activity of self-conscious persons who are teleologically related to the world in comprehending and loving it. A self-conscious person, devoting himself to the End of knowing and loving the world, is not only the most freely self-determining individual, but the fullest manifestation of God—is not only the best, but the most comprehensible thing in our experience. We understand the world (*i.e.*, grasp the richest variety of specific differences as forming the most complete and comprehensible unity) in so far as we find it to consist of individuals freely determining themselves to their own Ends, which include the Ends of all others—realising their own individualities through the richness, intimacy, and reciprocity of their relations to other individuals as being members one of another, the power of the whole being fully present in each. We find the world satisfactory according to our ideal of worth, in so far as universal good is realised in the good of each individual—in so far as each perfectly realises his own End by treating all others as perfect Ends in themselves. The world which would have perfect worth, the Kingdom of Grace in which all individuals, by finding their own good in the good of all the rest, give and take equally, and are all reciprocally both means and ends—would also be the perfectly intelligible world. It would be perfectly intelligible, because there would be no power outside any individual which he would not understand as being his own—as being God's power working in him. It would have perfect worth, because the whole good would be fully realised in each individual, so that no one could miss any portion of good; the more we were to eat our cake, the more we should have it. We, being rooted and grounded in love, should be strong to apprehend with all the saints what is the breadth and length and height and depth, and to know the love which passeth knowledge, and should be filled with all the fulness of God. It was this teleological ideal that Plato was wont to call the One or absolute Good; and he described our relation to it as that of pure Reason cognisant of Truth, as the love of ideal Beauty, or as the intellectual vision of full Reality whose brightness was too dazzling for the eye of sense to behold. The claim that the teleological ideal is the reality of the world, carries us indeed out of

the region of soberly understood fact which is matter of scientific knowledge and undeniable universal experience; it is rather a point of view which can only be reached under the spell of poetry and religion—a kind of second sight which is the peculiar possession of poets drunk with the love of Nature,

Who neighbour the invisible
So close that their consent
Is only asked for spirits masked
To leap from trees and flowers,

and of blinded religious enthusiasts who see “all things working together for good for them that love God”; the obstinate conviction of mystics; the delusion of lovers, who as perfect ends to one another seem to have entered the *καλλίπολις* which is in heaven. The rest of us cannot say more than that in the world as we know it—the semi-causal semi-teleological world—each unit implies all the rest, is only through their power; that there can be no such thing as an isolated unit of consciousness, still less such a thing as an isolated unit of matter; that all efforts after knowledge and goodness are based on the hope of finding each unit not only to be causally determined by but to be teleologically one with all the rest—of finding all units to be individuals knowing and valuing themselves and at the same time knowing and valuing all the world; and that we can understand our own character and activity, and through that the rest of the world, only in the light of the teleological ideal of the whole present in all parts, that is, only as imperfectly realising such an ideal and struggling towards the perfect realisation of it.

SYMPOSIUM—IN WHAT SENSE, IF ANY, IS IT TRUE THAT PSYCHICAL STATES ARE EXTENDED?

I.—By G. F. STOUT.

MORE precisely, the problem before us may be formulated as follows:—In what sense, if any, is the presentation of extension itself extended? Perhaps this question is not co-extensive with that which we have to deal with in this discussion; but at any rate it is the primary form in which that question arises, and it must be answered in this form before it can be usefully asked in any other. Before coming to close quarters with it, we have to notice that there is no need for confining the question to the case of extension alone. The principle involved is

of far wider application. What we are really asking is whether, and in what sense, the experience through which an object is cognised partakes of the nature of that object. On the one hand we have the statement of Mr. Bradley, that a psychical state must be what it stands for or signifies; and, on the other, the equally confident affirmation of Professor James, that cognitive act and object cognised are so distinct that no inference can be made from the nature of the one to the nature of the other.

There is no doubt that ordinary language gives strong *primâ facie* support to the view of James. It sounds nonsense to call the idea of a triangle triangular; or to say that our perception of a tract of country has a horizon or a north-west corner. Similarly, no one would naturally speak of a red or a sour sensation. At the same time, it must be noted that common sense does not support Professor James's contention in that application of it which he thinks most important. He maintains that the complexity of the object is under no conditions a reason for assuming any corresponding complexity in our apprehension of it. Now, it is undeniable that the plain man naturally supposes that, where the parts of an object are simultaneously presented, and, *a fortiori*, where they are simultaneously distinguished from each other, a distinct and special subjective experience exists, answering to each distinct and special point of the presented whole. Of course, this does not apply to the case where a complex whole is apprehended as a unit in distinction from other co-ordinate units, without apprehension of its internal complexity. But this is a special case, which does not essentially concern us at present. The kind of question we have to deal with is such as the following:—When we perceive a spectrum, are there as many modifications of subjective experience as there are presented colours? Common sense, undoubtedly, replies that there are; and I think, if pressed on the point, it would bring forward an obvious, and, as it appears to me, a cogent argument. It would say that each of the colours might be separately perceived in succession; and that then no one would deny the existence of a sequence of distinct modifications of subjective experience. There is no reason for supposing that, when the colours are presented simultaneously instead of successively, these distinct experiences are no longer to any extent distinct, but become merged in an absolutely undifferentiated simplicity. What better proof could be given of the complexity of anything than the possibility of its parts occurring in detachment from each other?

Now, an extended object is, as such, a complex object, and there ought therefore, according to common sense, to be a corresponding complexity in the apprehension of it. The presentation of each part should be a distinct constituent of the presentation of the whole.

None the less, common sense refuses to admit that the presentation of extension is itself extended. The subjective complexity is one thing, the objective complexity is another. The question arises—What motive has common sense for drawing this distinction, and is the motive a sufficient one?

It appears to me that there is a very obvious motive, and one which is quite satisfactory. The parts of extension are connected with each other by relations which are quite different in kind from those which connect the parts of a psychical complex, as such. The psychical relations include all those which the psychologist expounds, such as association, fusion, arrest, significance in relation to psychical ends, and so on. The relations of the parts of the extended object, as such, are those which geometry investigates, such as equality, inequality, parallelism, and so forth. Thus, though in both cases there is a complexity, the form of combination characteristic of the complex whole differs. The presentation of the form of combination characteristic of an extended whole, is not to be identified with the form of combination characteristic of the complex experience in which the extension is apprehended. On the contrary, the apprehension of the plan of combination of the extended whole is merely one special constituent among others of the psychological whole. The form of combination of the psychological whole is not apprehended at the moment in which the extended whole is apprehended. On the contrary, it is only revealed to reflective analysis.

Perhaps it will be said that I am drawing too sharp a line between presentation and presented object. This is a question which I have elsewhere discussed, and I need not enter upon it at great length here. I would like, however, to draw attention to a single case which appears to me especially instructive. As we approach or recede from an object in space (*e.g.* a tree), the magnitude of the image which it casts on the retina increases or diminishes. This involves different modifications of presentational consciousness. We may, if we choose, turn our attention to the contents of these varying visual presentations: we then find that they form a series of magnitudes widely differing from each other, according to our varying distance from the tree. But, in general, the visual magnitude, as such, passes unnoticed. It is merely experienced, not perceived. It serves to mediate the thought of the real magnitude of the physical object. The same visual magnitude may stand for different real magnitudes, and different visual magnitudes for the same real magnitude, according as the perceived distance of the object is greater or less. Now, if the experience which perceives extension itself possessed the extension perceived, it would be impossible for the same experience to represent different extended magnitudes. It

still remains true that the complexity of the experience corresponds to the complexity of the object, so far as the constituent parts of the complex object are presented. The view of an object at a distance, is more indistinct than the nearer view of it. But the psychical experiences in the far view and in the near view may both refer to one and the same object, although they differ in complexity and in that kind of psychical quantity which has been called "extensity."

I have, I think, indirectly met Mr. Bradley's argument in his article on the present question in *Mind*.* He fails, I think, to see that the presentation of a form of synthesis is not, as such, a synthesis of presentations, in a psychological sense. It belongs rather to the matter to be combined in psychological relations, than to the form of psychological combination itself. There is only one point which I should like specially to refer to. Mr. Bradley says at the outset: "If what is psychical is not extended, then nothing is extended, for in the end everything must be psychical." I admit that everything which comes within the sphere of an individual experience can be regarded as *something* psychical; but I deny that this *something* psychical need be regarded as a psychical state. Objects of perception and thought are not, as such, states of consciousness, though thoughts and perceptions are so. Objects of thought, as such, are psychical because their existence as objects pre-supposes the thought which thinks them, or, as I should prefer to say, thinks of them. But their nature and existence, as they are apprehended by thought, is quite independent of the special conditions which characterise this or that act of thinking as a psychical state. When we speak of psychical states, we have in view an individual experience considered merely as a finite thing—as a mere fragment of universal reality. When we speak of psychical objects, we take into account, explicitly or implicitly, the fact that the individual experience is not merely finite—the fact that, though it is from one point of view only a fragment of universal reality, it can take cognizance of the whole, as such, and of the parts of the whole which lie outside its own existence as limited in space and time. This I put forward merely as a fact which to me appears more conspicuous and undeniable than any other fact whatever. To dwell on it further would lead to metaphysical speculation.

* N.S., Vol. iv, No. 14, pp. 225 ff.

II.—By MRS. SOPHIE BRYANT, D.Sc.

I experience some difficulty in coming after Mr. Stout, having also carefully studied Mr. Bradley, so different are the two dialects of philosophical language used by these thinkers. It is most likely, therefore, that I will fall into serious errors of interpretation, for which, I trust, that Mr. Muirhead presently will not deal with me too severely. To the best of my ability I will use the language in which the discussion has been opened by Mr. Stout.

Mr. Stout's discussion of the question appears to turn first on the distinction, as conceived by him, between "an object" and "the experience through which an object is cognised," or, as he expresses it more frequently, "between presentation and presented object," or, quoting Professor James, "between an object and the apprehension of the object." By psychical state he understands the presentation, never the object presented, and thus he crosses swords with Mr. Bradley, who, though using different language, is obviously satisfied that the objects presented in consciousness are psychical states, and *the* psychical states of which in the first instance extension is affirmed, though after such affirmation certain further questions remain. Such further questions might be stated thus:—(1) How is this extension of the psychical object related to the qualities of that objective world to which we refer it as part of a whole, independent of our individual experience? and (2) How is it related to the elements and constitution of the sensory stimuli to which it adheres on the one hand, and to the formal synthetic activity of the soul which constitutes it on the other?

But these questions need not detain us now. We must first decide with whom to throw in our lot, if with either, as regards the classification of "presented objects" as such. I say "as such," because it is clear that they may, and must, be classed as psychical in the science of consciousness, and also that no one would think of treating them as other than physical—non-psychical—in physical science. To which sphere, therefore, do they belong "as such"?

If the question is asked in this way, it seems obvious that we must allot them to the psychical sphere. The form of the phrase, "presented object," or any of the other equivalent forms used by psychologists, seems to make it clear that the "objects" are here to be considered, not as objects *in* the world, but as objects *in*—not merely of or for—the individual consciousness. Our question, indeed, bears two different meanings, according to the universe of discourse in which it is asked. To the plain man and the man of

physical science, objects are all *in* the world, and only *for* consciousness, if any reference whatever to consciousness be made: for him it is the world and the objects in it that are extended, not the states of consciousness in which he thinks of them more or less confusedly as represented or revealed. What he means by extension, if you press him, is the quality of the "thing in itself," and he will admit that he does not actually know this "in itself," but only—he will say "only," and feel momentarily depressed—as consciousness pictures it. No doubt the philosopher could set him right in several points, and correct the crudity of his views on the relation between consciousness and the external world, but after correction his theme would still be of objects as part of the universal reality lying outside the experience of the mere individual. Objects as such, *i.e.* as extended and otherwise, are to him not *in*, but *for* consciousness.

But his universe of discourse is not that of the Aristotelian Society. Presented objects, as such, are for us part of the subject matter of psychology; we do speak of them as having "in view an individual experience." On the other hand, they are apprehended as states of it. Indeed it has always seemed to me conducive to clearness to retain this word "state," more especially for the *object* in consciousness, using some other term connoting activity—"becoming"—such as "process," for the operations of thought, which issue in the perception of objects. When the object as perceived fills consciousness, with attention fixed on it, and nothing else consciously going on, that is surely the condition most fitly called "state."

Now though physical science has much to say in its sphere about the geometrical qualities of the external world, taking for granted just as consciousness gives them the intuitions of extension, it is also true that psychological science is amply supplied with occupation in the study of these intuitions from her point of view, and that is surely as she finds them in the state of the psychical individual. They do not, of course, enter as a quality into all his states, but into just that large and important group which, otherwise regarded, are to him the external world.

And so I venture to think it proper to say that psychical states are extended; or, as I would prefer to put it, *extension is a quality—the essential quality—of a certain well-marked class of psychical states or objects*. This answer has been given on the ground that our universe of discourse is psychological, and that, therefore, by extension, we should mean that which the psychologist rather than the physicist means by extension, *i.e.* the form under which the external world is apprehended in the individual experience.

This, however, hardly puts the matter strongly enough. The existence of such a science as pure geometry is a unique fact,

indicating that qualities of extension, even when there is no word of psychology, can be discovered and discussed without end, in the absence of all verification by experiment. Without asserting the absolute purity of pure geometry, it is at any rate so pure that it may be described as a product of mental activity, working on sensory material of such a kind as to impose no more than a very few simple, though strict, limitations. All the best work of pure geometry is done in the field of spatial, which is perhaps a little more than visual, imagination, a place which in some, no doubt, is very roomy and very brilliantly lit up. Images are here called up by orderly thought for further study; these images, as such, seem to me to be very good examples of psychical objects or states evidently consequent on the process of thought by which they are also perceived, and if such images are not in their own nature extended, I doubt that I know anything which is. If we ask the geometer, as such, what then would he say? I think he would say that the extension, which is the subject matter of his study—extension *per se*—is known to him and studied by him in states of his own mind.

So far, I may seem to have been discussing a mere point of definition, though I submit that it is a point on which depends much that is essential one way or the other in our theory of extension. But the most interesting question is that which lies behind, and is dealt with so carefully by Mr. Stout:—"Is the presentation of extension itself extended?" or, in other words, is the process of thought which issues in the presence of an extended object itself extended? Here I am happy to follow Mr. Stout, in holding (1) that it is not, but (2) that there is a complexity in the subjective process corresponding to the complexity of the objective result. I will, however, go a little further, and confess to at least a suspicion that for space, as not for colour and sound and other compounds, *it is the complexity of the subjective process which makes the complexity of the object just what it is.* As Mr. Bradley reminds us, "so far as mere space is concerned, we appear to possess its nature inwardly, and hence to be able within ourselves to control and develop its essence." The matter of sense no doubt furnishes material for the subjective process, but this material is of such peculiar simplicity that the formative or subjective factor stands out as predominant. A fact to which Mr. Bradley refers, and which I had noted independently before reading his paper, illustrates the native energy of the subjective constituent in the constitution of the spatial percept. In some minds at least all subjective complexity tends to express itself in spatial metaphor. Mr. Bradley tells us, "A compound smell, or a compound organic sensation—nay, any kind of diversity, and every possible distinction in the end, when I dwell

on it, becomes localised somehow in a visual field." This is not an isolated case: the objective complex, such as the "compound smell or noise," happens with a subjective complex (following Mr. Stout). and this when dwelt upon so as to fill the mind—or shall we say soul?—and express itself as an object, the purest possible, that object turns out to be spatial in character. The effort to make one's self clear to one's self on any subject, *so as to see the whole all at once*, seems naturally to result in some kind of spatialisation of its points. (But by spatialisation I do not mean merely visualisation: a person who can only visualise can only take a limited view, but there is not time to discuss this difference further now.) The all-at-once-ness of space seems to me to be even more than its "side-by-side-ness," the leading characteristic of space, though each of these implies the other. The all-at-once-ness may be the first psychical character of a voluminous sensation which afterwards yields extension. In such a character there is a nascent complexity, in the development of which it may be that the side-by-side-ness of the differentiated elements necessarily appears as the purest kind of simultaneous separateness. After all what is the perception of space in itself, as perception—not as object perceived—but attention to an object, regarded as all-at-once, multiple, and continuous? It is an act of attention—one act felt as sub-divided and infinitely sub-divisible, and that in as many dimensions as the subject matter requires for its cognisance. That subject matter which gives us the external world as extended requires and admits of cognisance in three dimensions only, and thus real space—and, like it, imagined space—*i.e.* space proper, is limited. But when the mathematician discourses on transcendental space as a multiple in which more than three dimensions—that, is three independent simultaneities—may be apprehended, he does not use words without genuine meaning for philosophy. Space perceived is limited to three dimensions by the nature of its subject matter, but the spatial process of perception does not derive any such limitations from its own nature. The propositions of geometry derive their truth from the nature of the process—are, indeed, developments of that process—and as the process admits of generalisation they are generalised with it. So, conversely, the mathematician does not hesitate to use a proposition established analytically for four-dimensional space (*i.e.* the unvisualisable object of the four-dimensional spatial process), in order to prove more conveniently, or even discover, a proposition in the common space of three dimensions. I hope it is not altogether irrelevant to lead the topic into these considerations. They seem to me of some interest as setting in a somewhat vivid light the close dependence of the spatial object in all its developments on spatial process rather than on spatial subject matter.

III.—By J. H. MUIRHEAD.

Mrs. Bryant's solution of this question is a tempting one to all peaceable men. Mr. Bradley holds that psychical states are extended. Mr. Stout maintains that this is to confuse "the presentation of a form of synthesis" with the "synthesis of presentations, the matter to be combined in psychological relations" with the "form of psychological combination itself." Mrs. Bryant offers the olive branch of a distinction. She distinguishes between the "process" or "operations of thought which issue in the perception of objects," and the condition of attention in which consciousness is simply occupied with the object of perception, to the exclusion of other objects of regard. She agrees with Mr. Stout, that psychical states in the former sense are not extended. She finds a point of agreement with Mr. Bradley in her contention that states in the latter sense are. Whether she would go further with Mr. Bradley, and assert that psychical states so interpreted may have other attributes as well, such as weight and smell, she does not say. Now all this is tempting as a basis of conciliation. It is, therefore, with some regret that I find myself unable to accept it. I doubt whether it solves any of the difficulties that beset the problem. I am quite certain that, to my mind at least, it suggests new ones. If the unconscious operations of thought which issue in the perception of an object are non-spatial, one would have thought that it followed, *a fortiori*, that the conscious act of attention, with its attendant operations of analysis and synthesis within the whole attended to, was so also. One hesitates to question Mrs. Bryant's appeal to the authority of the mathematician in support of her own view, but I should have thought that the mathematician would have been the last to admit that the extension, which is the subject matter of his study, is the extension of his own states of mind, and not of things. It is, of course, abstracted from physical things, but this does not attach it to mental states.*

My own position in this controversy is frankly opposed to Mr. Bradley's, and, so far as I understand his contention, in agreement with Mr. Stout's. As the difficulties, however, which seem to me decisive against the view that psychical states are extended, are somewhat different from those that Mr. Stout has mentioned, though including them, I shall employ the rest of my time—(I.) In stating

* Some of Mrs. Bryant's distinctions have puzzled me. Thus she opposes "real" space to "imagined" space, and seems to think there is something "improper" about the former (p. 8). I should like to hear more of this.

them as shortly as I can; (II.) In trying to meet (also very shortly) one or two difficulties which seem to beset my own contention.

I. The first and clearest statement of Mr. Bradley's view occurs in *Mind* of January, 1895: "The idea of the extended has extension, the idea of the heavy has weight, the idea of the odorous has smell, and the idea of pleasure, beyond all controversy, I should have thought exists, and is so far pleasant" (p. 21). We may pass over the affront these words will convey to the ordinary man. As Mrs. Bryant would inform him with the least possible offence his universe of discourse is not ours. The question I wish to put is, whether this sentence is not a *reductio ad absurdum* of the view it states. Language is very slippery here, and we have to mind our steps. We may have an odorous idea or a ponderous idea as we may have a moral idea, but this does not mean that the idea has a smell or a weight any more than a moral idea has moral quality. By odorous we mean "of an odour," by ponderous "of a weight," as by moral "of a moral relation." It reminds us of what we used to be told in the Latin grammar of the objective and the subjective genitive. The smell or the weight of an idea may mean the smell or the weight, which the idea has, or it may mean the smell or the weight to which the idea refers. I do not wish to suggest that Mr. Bradley has been guilty of confusing these two in the examples just referred to, I merely wish to make this verbal point clear. In his last example, I certainly think there is a confusion. "The idea of a pleasure," he says, "exists, and is so far pleasant." But what does this prove? Pleasure, of course, is subjective, the idea of a pleasure is undoubtedly pleasant—if the pleasure be ours, or if we take pleasure in the idea. But to say this (if it is worth saying) is one thing, to say that the idea of the state of mind we call pleasure is pleasant is quite another, and is as untrue as the other is tautological.

My argument here is that the analogies referred to in the sentence I quoted do not support the doctrine that psychical states are extended. They reduce it to an absurdity.

My other difficulties are partly those with which Mr. Bradley himself deals in the article of April, 1895. He does not seem to me to meet them. The first one is that of the relation of the space of our psychical states to the space of the physical world. Mr. Bradley meets this by his well-known doctrine of a plurality of spaces. The space of perceived objects is one, that of dreams or story-books is another. This is too large a subject to enter on here. We may take Mr. Bradley's word for it that these spaces are different. But to say this is one thing, to say that the latter are the spaces of psychical states would be quite another. To the dreamer and the story-teller the

space of their dreams and stories is just as objective within their universes as dreamers and story-tellers as the space of their everyday world. Moreover, it is usually related to it in the mind of the dreamer or narrator more or less definitely. The child tells of the princess who lived "far, far away." The space of my own dreams is usually sustained upon a background of the space with which I am familiar in my waking consciousness.

The other difficulty which Mr. Bradley thinks it worth while to consider at any length is that of the relation of the states which are extended to the soul itself. Must we not say that the soul itself is extended if its states are? The answer apparently is that we might have to say so if all its aspects, or the predominant ones, were extended. But, we are told, "it has extension only here and there indirectly, and as a quality of some of its states," and hence it would be as absurd to call the soul extended as to call it sapid or odorous. The conclusion is that "the soul *has* extension," but "the soul is not extended." In connection with this argument two points suggest themselves which I shall merely mention. (a) On the same ground we shall have to say that the soul has a taste and a smell, though it does not taste nor smell. And if it be said that this is exactly what we say when we use the expression, "I have a taste or a smell," we are back again at our verbal quibble. We *mean* in this case, "I experience a taste or a smell": the *experience* is in the soul as mine the *taste* and the *smell* are in the world of objects. (b) In a later part of the article Mr. Bradley suggests that "every sort of diversity, after all, and every distinction, may imply space proper." If this turns out to be so, and if we admit that *all* conscious life implies the consciousness of diversity, what of the doctrine that we may not say the soul is extended, because the states involving extension occur only here and there?

II. There are difficulties, of course, in the view that psychical states are not extended. *Sensations*, we shall be told, are psychical states, and sensations have attributes, among others "extension." The psychology of the senses rests on this assumption (*see Külpe's Outlines of Psychology*, Eng. Tr., p. 30). Is this all a mistake? The answer seems to be that it is not a mistake for psychology. Like any other science, psychology has a right to its abstractions. It would be straining at a gnat and swallowing a camel if, after permitting the psychologist the working hypothesis of a sensation distinct from an object, we refused to permit him to endow this artificial object with the attributes which render it a serviceable assumption.

All this may be granted, but it may still be maintained that in *Representation* we have states which are extended. My idea of my horse, Mr. Bradley says, in a sense, has extension. True, it is the

idea of an extended thing; but it is not an extended idea. The image, if we like to say so, is extended, the act of imagination is not. Mr. Stout's treatment of this whole subject seems to me conclusive. I shall not dwell on it, but end by mentioning a metaphysical difficulty that has just been touched upon in this discussion. Do our conclusions, it may be asked, involve the wider consequence that the nature of the object affords no basis for inference to the nature of the activity of the mind that cognises it? Mr. Stout has already shown that Professor James's confident affirmation on this head will not hold with reference to the *complexity* of the object. Generally it may be said, with Hegel, that the mind "knows itself in the object," but this must not be taken to imply that its only means of doing so is by transferring the attributes of the object to itself without further ado. This is the sense in which Hume would have understood the phrase. It was, on the other hand, Kant's merit to have pointed out a new way of studying mind through the analysis of the logical structure of our experience of objects.

THE *A PRIORI* IN GEOMETRY.

By BERTRAND RUSSELL.

THE purpose of the present paper is purely logical, and aims at applying principles of general logic to geometrical reasoning. The inquiry which I propose to conduct may be divided into two parts: (1) an analysis of the actual reasoning of Geometry, with a view to discovering those essential axioms, and that fundamental postulate, without which this reasoning would become formally impossible; (2) a deduction, from the fundamental nature of a form of externality, of the principles which must be true of any such form, when treated in abstraction as the subject-matter of a special science. Our conclusion, as might be expected, will be the same in both cases: for the two arguments are fundamentally the same, and form together a completed circle. The element in geometrical reasoning, which both methods reveal as necessary to any Geometry, I shall call *a priori*.

As I have ventured to use the word *a priori* in a slightly unconventional sense, I will preface the geometrical inquiry by a few elucidatory remarks of a general nature.

The *a priori*, since Kant at any rate, has generally stood for the necessary or apodeictic element in knowledge. But modern logic has shown that necessary propositions are always, in one aspect at least,

hypothetical. There may be, and usually is, an implication that the connection, of which necessity is predicated, has some existence, but still, necessity always points beyond itself to a *ground* of necessity, and asserts this ground rather than the actual connection. As Bradley points out, "arsenic poisons" remains true, even if it is poisoning no one. If, therefore, the *a priori* in knowledge be primarily the necessary, it must be the necessary on some hypothesis, and the *ground* of necessity must be included as *a priori*. But the ground of necessity is, so far as the necessary connection in question can show, a mere fact, a merely categorical judgment. Hence necessity alone is an insufficient criterion of apriority.

To supplement this criterion, we must supply the hypothesis or ground, on which alone the necessity holds, and this ground will vary from one science to another, and even, with the progress of knowledge, in the same science at different times. For as knowledge becomes more developed and articulate, more and more necessary connections are perceived, and the merely categorical truths, though they remain the foundation of apodeictic judgments, diminish in relative number. Nevertheless, in a fairly advanced science such as Geometry, we can, I think, pretty completely supply the appropriate ground, and establish, within the limits of the isolated science, the distinction between the necessary and the merely assertorical.

There are two grounds, I think, on which necessity may be sought within any science. These may be (very roughly) distinguished as the ground which Kant seeks in the *Prolegomena*, and that sought in *Pure Reason*. We may start from the existence of our science as a fact, and analyse the reasoning employed with a view to discovering the fundamental postulate on which its logical possibility depends: in this case, the postulate, and all which follows from it alone, will be *a priori*. Or we may accept the existence of the subject-matter of our science as our basis of fact, and deduce dogmatically whatever principles we can from the essential nature of this subject-matter. In this latter case, however, it is not the whole empirical nature of the subject-matter, as revealed by the subsequent researches of our science, which forms our ground; for if it were, the whole science would, of course, be *a priori*. Rather it is that element, in the subject-matter, which makes *possible* the branch of experience dealt with by the science in question.* The importance of this distinction will appear more clearly as we proceed.

These two grounds of necessity, in ultimate analysis, fall together. The *methods* of investigation, in the two cases, differ widely, but the

* I use "experience" here in the widest possible sense, the sense in which the word is used by Bradley.

results cannot differ. For in the first case, by analysis of the science, we discover the postulate on which alone its reasonings are possible. Now, if reasoning in the science is impossible without some postulate, this postulate must be essential to experience of the subject-matter of the science, and thus we get the second ground. Nevertheless, the two methods are useful as supplementing one another, and the first, as starting from the actual science, is the safest and easiest method of investigation, though the second seems the more convincing for exposition.

After these general remarks, I will proceed to Geometry. I propose, first, by an analysis of geometrical reasoning, to prove that its possibility depends on three axioms, which I shall call the axiom of congruence or free mobility, the generalised axiom of dimensions, and the generalised axiom of the straight line, and that the truth of these axioms involves the homogeneity of space and the complete relativity of position. So far the argument proceeds by a mere analysis of Geometry. But passing now to the consideration of space, I shall contend, with Kant, that some form of externality, given either by sensation or by intuition (psychological questions are here irrelevant), is a necessary condition of our experience of an external world. But I shall contend that the particular form of externality, which we know as Euclidean space, is not necessary; that, on the contrary, all that is necessary is complete relativity of position. This is necessary, because externality cannot be an intrinsic property of anything. I shall then deduce, from the relativity of position, the three axioms which we found essential to Geometry. This will complete the circle of the double argument. The three axioms will be *a priori*, in the sense that any form of externality, in beings with our laws of thought and a knowledge of an external world, must conform to them. The remaining axioms required to define Euclidean space will remain, for Geometry, empirical, since no geometrical principle and no possibility of experience of an outer world can prove them to be necessary.

A.—Geometrical Argument.

Geometry has always possessed, since Euclid, a great advantage—at least for the philosopher—over most of the other sciences, in that it prefaces its reasonings with a definite statement of those axioms which it believes to be fundamental. Until the very end of last century, Euclid's statement, though felt to be unsatisfactory, was believed to be accurate: many attempts were made to *prove* the axiom of parallels, but none to dispense with it. At first by Gauss, however, and then by a whole school of geometers, an investigation

was made into the effects of a denial of the doubtful axiom. It was found that geometries, whose reasonings, granted the premisses, were equally cogent and equally free from contradictions, could be constructed on a basis opposed to Euclid. Hence arose the idea, chiefly fostered by Helmholtz, that all the axioms were empirical, and that nothing but conformity to experienced space prompted the acceptance even of those axioms which Metageometry retained. Riemann and Helmholtz believed, in fact, that a Geometry could be constructed without the axioms which they retained, but neither they nor subsequent mathematicians have constructed such a Geometry. Three axioms are always retained in non-Euclidian systems, namely, the axiom of Free Mobility, the axiom that space has a finite integral number of dimensions, and the axiom that any two points have an invariant relation, namely, distance, which is unaltered by a combined motion of the two points as one figure.* I will discuss these axioms successively, and endeavour to prove that, without them, spatial magnitude would be unmeaning, and localisation would be impossible.

I. *The Axiom of Free Mobility.*—Some of Euclid's axioms have been classed as arithmetical, and have been supposed to have nothing particular to do with space. Such are the axioms that equals added to or subtracted from equals give equals, and that things which are equal to the same thing are equal to one another. But if these arithmetical axioms are to be applied to spatial magnitudes, they must have some spatial import, and thus even this class is not, in Geometry, merely arithmetical. The spatial element involved in the geometrical use of all these axioms is, in fact, a definition of spatial magnitude.† A definition of spatial magnitude, again, since geometrical space is infinitely divisible, reduces itself to a definition of spatial equality. For, given this last, we can always divide two

* *Vide Sophus Lie, Die Grundlagen der Geometrie, Leipziger Berichte, 1890.*

† I ought to point out that most modern geometers, as adherents of the 'projective school,' regard magnitude as a conception wholly irrelevant to Geometry, and refuse to admit measurement as an aim of geometrical reasoning. This fact, however, does not invalidate my argument, for the following reasons:— (1) Spatial measurement remains a requisite for other sciences and for daily life. (2) The reduction of metrical to projective Geometry is effected, except in the case of hyperbolic space, by the use of imaginaries, and has therefore a purely technical, not a philosophical, import (*Vide Klein, Vorlesungen über Nicht-Euklidische Geometrie, Göttingen, 1890*). (3) Even projective Geometry involves localisation, and is even called, by many of its adherents, the Geometry of position; and localisation, as I have endeavoured to show, is exactly the same problem as that of spatial measurement. (4) Projective Geometry uses precisely those three axioms which I have regarded as *a priori* necessary for spatial measurement. (*Vide Sophus Lie, op. cit.*)

unequal magnitudes into a number of equal parts, and count the number of such parts in each.

We require, then, at the very outset, if Geometry is to be possible at all, some criterion of spatial equality. Now, two spatial magnitudes, unless they are whole and part, are necessarily external to one another, and cannot, therefore, as they stand, be directly compared. For comparison, therefore, some axiom is required. The requisite axiom is given by Euclid in the form, "Magnitudes which exactly coincide are equal." But this form does not bring out the real point of the difficulty, which we only discover when he uses his axiom (*e.g.*, in Book I, Prop. IV). The two magnitudes have to be *brought* into coincidence by a motion of one or both of them. Hence, if mere motion could alter shapes, our criterion of spatial equality would break down, and Geometry would become impossible. It follows that the application of the conception of magnitude to Geometry involves the following axiom: *Spatial magnitudes can be moved from place to place without distortion*; or, as it may be put, *shapes do not depend in any way upon absolute position in space*.

This is the axiom of Free Mobility, or of Congruence, as it is sometimes called. It has been regarded by Helmholtz and Erdmann as derived empirically from our experience of rigid bodies. But if the above deduction be correct, Helmholtz's view must be mistaken. For the mere notion of spatial magnitude, and hence of a rigid body, as one whose shape remains unaltered through motion, becomes meaningless if the axiom be denied. The axiom, in fact, renders the experience in question possible, and cannot, therefore, be itself logically dependent on this experience. I do not mean to deny, of course, that we are made aware of Free Mobility, psychologically, by experience of approximately rigid bodies, and that, in a world of fluids, much more acute wits might have been needed to discover it. But in that case, the inhabitants of a fluid world would have to do without any Geometry until they discovered the axiom. The facts, I think, may be stated thus: When our axiom has made the conception of a rigid body possible, we find certain bodies, such as the platinum bar in the exchequer, which approximately answer to this conception. Having eliminated mere motion as a cause of change of shape, we can discover the other causes—change of temperature, &c.—by the ordinary empirical inductive methods. Our actual measurements, therefore, which are always effected by means of such approximately rigid bodies as we can discover, must always be empirical and inaccurate. But Geometry, as the science which deals with the conditions of measurement, and discusses shapes rather than actual bodies, will not be rendered empirical by this fact. *Actual* motions must be motions of matter, whose rigidity can be only empirically

known; but *geometrical* motions are motions of shapes, and afford the accurate and *a priori* standard by which alone the empirical inaccuracies become discoverable and acquire a logical meaning.

Having now, I hope, made clear the *meaning* of the axiom of Free Mobility, I will endeavour to elucidate its necessity by discussing two cases where it does not hold, namely, the Geometry of non-congruent surfaces (*e.g.*, an egg), and the measurement of time.

We have, in ordinary Geometry, many elaborate and satisfactory systems for non-congruent surfaces, *e.g.*, for ellipsoids and hyperboloids. Why, I may be asked, is a thoroughly non-congruent Geometry more impossible than such systems? The answer is obvious. The whole of the Geometry of such surfaces is only rendered possible by the use of infinitesimals, and in the infinitesimal all surfaces become plane. The fundamental formula, that for the length of an infinitesimal arc, is only obtained on the assumption that such an arc may be treated as a straight line, and that Euclidean Plane Geometry may be applied in the immediate neighbourhood of any point. If we had not our Euclidian measure, which could be moved without distortion, we should have no method of comparing small arcs in different places, and the Geometry of non-congruent surfaces would break down. The possibility of such systems, therefore, pre-supposes the axiom of Free Mobility, and can form no argument against its *a priori* necessity.

It remains to discuss the case of time-measurement. This case is very peculiar, for although time, like space, is homogeneous in all its parts, motion through time is impossible, because time has only one dimension. Superposition, as contemplated in the above criterion of spatial equality, is only possible for magnitudes of at least one dimension less than that of the manifold in question. In space, we cannot superpose two solids; in time, since we have only one dimension altogether, we cannot superpose two times. No event can be made to recur, without alteration, at another place in the time-series, in order to test the equality of its duration with that of some other event. No day can be superposed upon another day. Hence, it would seem, if the above discussion be correct, time-measurement must be impossible. As regards *direct* time-measurement, this is indeed the case. Time is measured *indirectly*, by means of space. We are reduced, in fact, to the more or less arbitrary assumption that some motion, or set of motions, given in experience, is uniform. Equal times, on this assumption, are measured by equal spaces traversed. Fortunately, we have a large set of motions which all roughly agree: the swing of the pendulum, the rotation of the earth, the revolutions of the planets, &c. These do not exactly agree, but they suffice to suggest the laws of motion, by

which we are able, on our arbitrary hypothesis, to estimate their small departures from uniformity, just as we were able, by assuming Free Mobility, to measure the departures of actual bodies from rigidity. Philosophically, of course, the assumption is not arbitrary, but mathematically, the only reason we can give for it is, that without it time-measurement would be impossible.

The Axiom of Free Mobility involves, for its truth, the homogeneity of Space, or the complete relativity of position. For if any shape which is possible in one part of space be possible in another, it follows that all parts of space are qualitatively similar, and cannot, therefore, be distinguished by any intrinsic property. Hence, positions in space, if our axiom be true, must be wholly constituted by external relations, *i.e.*, *Position is not an intrinsic, but a purely relative, property of things in space.* If there could be such a thing as absolute position, in short, all Geometry would be impossible. This is the fundamental postulate of Geometry, to which each of the three necessary axioms leads, and from which, conversely, as we shall see in the second part of the argument, each of these axioms can be deduced.

II. *The Axiom of Dimensions.*—We have just seen, in discussing the axiom of Free Mobility, that all position is relative, *i.e.*, that a position exists only by virtue of relations. It follows that, if positions are definable at all, they must be uniquely and exhaustively described by some finite number of such relations. If Geometry is to be possible, it must happen that, after enough relations have been given to determine a point uniquely, its relation to any fresh known point must be deducible from the relations already given. Hence we obtain, as an *a priori* condition of Geometry, logically indispensable to its existence, the axiom that *Space must have a finite integral number of Dimensions.* For every relation required in the localisation of a point constitutes a dimension, and a fraction of a relation is meaningless, while an infinite number of dimensions would be practically impossible to determine.

This axiom, like that of Free Mobility, is accepted by all metaphysicians. It is thus stated, for example, by Helmholtz:—"In a space of n dimensions, the position of a point is uniquely determined by the measurement of n continuous variables (co-ordinates)." (*Wissenschaftliche Abhandlungen*, vol. ii, p. 614.) So much, then, is *a priori* necessary to Geometry. The restriction of the dimensions to three, on the other hand, appears to have no logical necessity, and may be set down as wholly empirical. The extension of the dimensions to four, or to n , alters nothing in plane and solid Geometry, and presents no new logical difficulties; but some definite

number of dimensions is assumed in all Geometries, nor is it possible to conceive of a Geometry which should be free from this assumption.

The limitation of the dimensions to three, though it is empirical, is not liable to the uncertainty and inaccuracy which usually belong to empirical knowledge. For the alternatives which logic leaves to sense are discrete—if the dimensions are not three, they must be two or four, or some other integer—so that *small* errors are impossible. Hence the certainty of the axiom of three dimensions, though in part due to experience, is of quite a different order from that of (say) the law of gravitation. In the latter, a small inaccuracy might exist and remain undetected; in the former an error would have to be so large as to be utterly impossible to overlook. Hence the certainty of our whole axiom is almost as great as that of its *a priori* element.

III. *The Axiom of the Straight Line.*—We have one more axiom to consider, before we have exhausted the logical pre-requisites of spatial measurement. This axiom is required to render possible the measurement of a special, but fundamental, spatial relation, namely *distance*.

We have seen that the measurement of spatial magnitudes, at bottom, is the same problem as that of localisation, and consists in the determination of spatial relations. I have hitherto spoken of these relations as though their meaning were self-evident, and as though spatial magnitude were a term which any one might use unchallenged. The time has come to examine more minutely into these assumptions.

First of all, what *is* the relation between two points? Obviously their distance apart. Well and good, but how is this to be measured? If it is to be measurable at all, it must be measured by a curve which joins the two points; and if it is to be unique, it must be measured by a curve which those two points completely determine. But such a curve is a straight line, for a straight line is defined as a curve determined by any two of its points. Hence, *if two points are to have to each other a determinate intrinsic relation, without reference to any other point or figure in space, space must allow of curves uniquely determined by any two of their points, i.e., of straight lines.*

This is the axiom of the straight line, but we can hardly regard its necessity for Geometry as established by so summary an argument. Many difficulties must be met before it can be regarded as proved. The chief of these is a mathematical difficulty, arising out of spherical Geometry, for a discussion of which I have not time to-night, but must refer to *Mind*, N. S., No. 17, pp. 16-18. But the first and obvious difficulty is that of turning the above hypothetical

conclusion into a categorical one. Why should Geometry be impossible, if the relation between two points were not independent of the rest of space? Why must our spatial magnitudes be built up out of distances and their relations? Why should not a reference to outside space be always necessary in determining distance?

The answer to this question lies in the axiom of Free Mobility, or its equivalent, the homogeneity of space. To begin with, two points must, if Geometry is to be possible, have *some* relation to each other, for we have seen that such relations alone constitute localisation. Now, if two points have a relation to each other, this must be an intrinsic relation. For it follows, from the axiom of Free Mobility, that two points, having the same relation to each other, can be constructed in any other part of space; if this were not possible, we have seen that Geometry could not exist. Hence the two points can traverse all space in a combined motion, without altering their relation to each other. But, in such a motion, any external relation of the two points, any relation which involves any other point or figure in space, must be altered*; hence the relation between the two points, being unaltered, must be an intrinsic relation, a relation involving no other point or figure in space; and this intrinsic relation we call distance.

It might be thought, perhaps, that the distance between two points involved a reference to the intermediate points on the straight line joining them, but the above argument shows that this is not the case. For the intermediate points, in a combined motion of the two whose distance we are discussing, do not accompany the two moving points, and yet the distance remains unaltered. In any given position of the two points, the fact that the others are intermediate is deduced from the nature of distance, as measured by a certain curve on which the other points lie, and not *vice versa*. Only when distance, and its measurement by the straight line, have been established, do the intermediate points on the straight line acquire any peculiar relation to the two whose distance is in question.

Thus the first objection is disposed of. If Geometry is to be possible, any two points must have to each other a relation independent of the rest of space. But why only one? Why not several? The answer to this lies in the fact that, as we saw in discussing Free Mobility, points must be wholly constituted by relations, and can have no intrinsic nature of their own. A point is defined by its relations to other points, and when once the relations necessary for definition have been given, no fresh relations to the points used in

* This is subject, in spherical space, to the modification pointed out in *Mind*, N.S., No. 17, p. 18.

definition are possible, since the point defined has no properties from which such relations could flow. Now one relation to any one other point is as good for definition as more would be, since, however many we had, they would all remain unaltered in a combined motion of both points. Hence there can be only one intrinsic relation between any two points.

Hence two points must have one, and only one, relation independent of the rest of space. But need this relation be measured or defined by a curve which the two points completely determine?

We are used to the definition of the straight line as the *shortest* distance between two points, and this definition implies that distance might be equally well measured by other curves. This implication I believe to be wholly false. For when we speak of the length of a curve, we can give a meaning to our words only by dividing it into infinitesimal arcs, of which each may be regarded as a straight line, and whose sum gives a straight line equivalent in length to the curve measured. This necessity of the straight line is implied in the mathematical phrase, the *rectification* of curves. Unless we pre-suppose the straight line, as the measure of the infinitesimal arcs, we can never discover the length of our curve, and hence can never discover the applicability of our definition of the straight line as the *shortest* distance.

Again, let us suppose that some other curve, say a circle, is taken as our measure of distance. Then the distance between any two points becomes indeterminate, for through two points we can draw an infinite number of circles, each of which will give a different distance. To overcome this indeterminateness, we should have to define our measuring circles as circles of given radius. But a given radius involves a measure of distance already given, otherwise we cannot know that two radii are equal. If it is said that we could define our circles as congruent *inter se*, without introducing the notion of a given radius, the choice of our typical circle would be perfectly arbitrary, and could only be effected by introducing, into distance, a relation to some third point, such as the centre of the circle. (For three points are needed to define a circle.) But we have seen that distance must be an intrinsic relation between two points. Hence the circle is impossible as a basis for the measurement of distance. If we seek a last escape from this conclusion, by restricting the direct measurement of distance to infinitesimal arcs, we do, it is true, so long as we exclude circles of infinitesimal radius, get a definite measure for the distance between two consecutive points, and hence for distance in general. But that is only because an infinitesimal arc of a circle is a straight line, and the measurement is effected through the above general method of measuring curves by

dividing them into infinitesimal straight lines. Hence, once more, the circle is not available for our present purpose. Similar objections apply, of course, to any other curve. Hence, for the measurement of the intrinsic relation between two points, we require a curve which those two points uniquely determine, *i.e.*, the straight line.*

We can now take a further step in the argument, and say: Not only must the intrinsic relation between two points be *measured* by a curve which those two points uniquely determine, but the relation must actually *be* that curve. If, as we saw in discussing the axiom of Free Mobility, all position is relative, and all spatial magnitudes are spatial relations, then it follows that a curve in space must actually *be* a relation or complex of relations.† If I had used this doctrine at the start, I might have greatly shortened the above discussion. But it seemed better to avoid a controverted view in the first introduction of the axiom. Now, however, when the axiom has been shown, to the best of my ability, to be necessary to Geometry, we may argue thus: Two points *can* have no relation but what is given by lines which join them, and therefore, if they have a relation independent of the rest of space, there must be one line joining them which they completely determine. For what sort of thing can a spatial relation between two distinct points be? It must be something spatial, and it must, since points are wholly constituted by their relations, be at least as real and tangible as the points it relates. Only a line joining the points, it would seem, is capable of satisfying these requirements. Hence, once more, an intrinsic relation must involve—nay, must actually *be*—a unique line joining the two points. That is, linear magnitude, and hence Geometry in general, is logically impossible, unless space allows of curves uniquely determined by any two of their points.

To sum up: If, as the possibility of spatial measurement requires, all position is purely relative, then every point must have, to every other, one, and only one, relation independent of the rest of space. This relation is the distance between the two points. Now a relation between two points can only be defined—can only *be*, in fact—a line

* It is not intended to imply, in the above argument, that two points have no relation but the intrinsic relation of distance. On the contrary, they have also an extrinsic relation, direction, which involves a reference to other straight lines. But direction is meaningless apart from straight lines; it is, in fact, primarily a relation between straight lines, just as distance is a relation between points. The basis of spatial relations therefore remains the simple intrinsic relation of distance, as measured by the straight line. What I had to prove was that two points *have* a relation independent of external reference, not that they have no relation dependent on external reference.

† Compare James, *Psychology*, vol. ii, pp. 149, 150.

joining them. Hence, a unique relation involves a unique line, *i.e.*, a line determined by any two of its points. Only in a space which allows of such lines is linear magnitude, or localisation in general, a logically possible conception.*

The above three axioms, then, are *a priori* necessary to Geometry. No others can be necessary, since geometries logically as unassailable as Euclid, geometries in which space is perfectly homogeneous, and position is purely relative, have been constructed without any other axioms by the metageometers. The remaining axioms of Euclidean Geometry—the axiom of parallels, the axiom that the number of dimensions is three, and the axiom of the straight line in Euclid's special form (two straight lines cannot enclose a space), are not essential to the possibility of a Geometry, *i.e.*, are not deducible from the fact that a science of spatial relations and magnitudes is possible. These, then, must be derived from more special experience.

In summing up the argument we have just concluded, we may give it a more general form, and discuss the conditions of measurement in any manifold, *i.e.*, the qualities necessary to the manifold, in order that magnitudes in it may be determinable, not only as to the more or less, but as to the precise *how much*.

Measurement, we may say, is the application of number to continua, or, if we prefer it, the transformation of mere quantity into number of units. Using *quantity* to denote the vague more or less, and *magnitude* to denote the precise number of units, the problem of measurement may be defined as the transformation of quantity into magnitude.

Now number is discrete, and springs from the pure intellect, while quantity is continuous, and springs from sense. Hence, measurement, which arises from the effort to synthesise this dualism, involves fundamental and unavoidable contradictions. But disregarding these for the moment, let us discuss the conditions which enable us, in using the notion of magnitude, to avoid any other than the unavoidable contradictions.

Number, to begin with, is a whole, consisting of smaller units, all of these units being qualitatively alike. In order, therefore, that a continuous quantity may be expressible as a number, it must, on the one hand, be itself a whole, and must, on the other hand, be divisible into qualitatively similar parts. In the aspect of a whole, the quantity is *intensive*; in the aspect of an aggregate of parts, it is *extensive*. A purely intensive quantity, therefore, is not numerable.

* Spherical Geometry forces us slightly to modify the above axiom, and state it in the form: Any two points must, *in general*, determine a unique straight line. In this form the axiom is no longer equivalent to Euclid's.

On the other hand, a quantity which can be divided at all into parts, must, since it is continuous, be *infinitely* divisible, otherwise the points at which it could be divided would form natural barriers, and destroy its continuity. But, further, it is not sufficient that there should be a possibility of division into mutually external parts; while the parts, to be perceptible as parts, must be mutually external, they must also, to be knowable as *equal* parts, be capable of overcoming their mutual externality. For this, as we have seen, superposition, which involves Free Mobility and perfect homogeneity, is necessary; in time, where superposition is impossible, direct measurement is also impossible, although all the other requisites for measurement are satisfied. Hence, infinite divisibility, free mobility, and homogeneity are necessary for the possibility of measurement in *any* manifold, and these, as we have seen, are equivalent to our three axioms. Hence these axioms are necessary, not only for spatial measurement, but for all measurement. The only manifold given in experience, in which these conditions are satisfied, is space. All other exact measurement—as could be proved, I believe, for every separate case—is effected, as we saw in the measurement of time, by reduction to a spatial correlative. This explains the paramount importance, to exact science, of the mechanical view of nature, which reduces all phenomena to motions in time and space. For number is, of all conceptions, the easiest to operate with, and science seeks everywhere for an opportunity to apply it, but finds this opportunity only by means of spatial equivalents to phenomena.

B.—*Philosophical Argument.*

We come now to the second part of our argument, which may be distinguished from the first part as deductive rather than analytic. This argument starts from the conditions of spatial experience, and deduces the above axioms as necessary consequences of these conditions, while our previous argument started from Geometry as its datum, and arrived, through the axioms, at the necessary conditions of their truth. The conditions for the truth of our essential axioms, as we have seen, resolve themselves into the homogeneity of space, or the complete relativity of position. In our present argument—which may be brief, since it is little more than a repetition, in inverse order, of the geometrical argument—we shall see that the relativity of position is deducible from the fact that we experience an external world, and that our three axioms are deducible from the relativity of position.

All experience of an external world, we may say with Kant, depends on the existence, psychologically, of some form of externality:

I shall not enter into the arguments for this view, as I have nothing to add to the stock argument of the Transcendental *Æsthetic*, that to experience anything as external involves, as a logically prior condition, some form of externality in the mind. Whether this form is given in sensation, or in a pure intuition, is to me wholly irrelevant. All that is relevant is the purely logical point, that, if experience excludes solipsism, if perception presents me with an external world, then this externality cannot be logically dependent on the experience in which it is given, but is itself the logical prerequisite of such an experience. Accepting, then, as a mere experienced fact, the existence of an external world, some form of externality is an *a priori* condition of our knowledge of such a world.

So far with Kant. But Kant extended this *a priori* necessity to the whole of Euclidean space, and in this, I think, Metageometry proves that he went too far. For all that his argument proves is, that the properties which must belong to *any* form of externality are *a priori*. Now Euclidean space, as we have seen, has properties which are not necessary to any form of externality, and are not shared by non-Euclidean spaces. We can see, with very little trouble, that the properties which must belong to any form of externality are precisely those axioms which are shared by Euclid and Metageometry, and which are *a priori* necessary to any Geometry. I will give, very briefly, the outlines of this deduction.

In the first place, externality is an essentially relative conception—nothing can be external to itself. To be external to something is to be an other with some relation to that thing. Hence, when we abstract a form of externality from all material content, and study it in isolation, position will appear, of necessity, as purely relative—it can have no intrinsic quality, for our form consists of pure externality, and externality contains no shadow or trace of an intrinsic quality. Hence we derive our fundamental postulate, the relativity of position. From this follows the homogeneity of our form, for any quality in one position, which marked out that position from another, would be necessarily more or less intrinsic, and would contradict the pure relativity. From the homogeneity of our form follows Free Mobility, for our form would not be homogeneous unless it allowed, in every part, shapes, or systems of relations, which it allowed in another. From the relativity of position follows the finite integral number of dimensions. For positions are defined simply and solely by relations to other positions. Any position, therefore, is completely defined when, and only when, enough such relations have been given to enable us to determine its relation to any fresh known position; and every such relation constitutes a dimension. At this point, it is

true, a difficulty arises: why should any number of these relations of externality suffice to determine the relations to a fresh known position? This difficulty is serious, and the only answer I can think of lies in the systematic unity of the world. If the relations between one point and a certain number of others never gave indication of its relation to fresh known points, we should have to suppose a system of relations perpetually reaching out into new worlds, and this, while it would throw doubt on the homogeneity of our form, would leave a scrappy world without systematic unity. It is essential to such unity—a unity which, being equivalent to the law of excluded middle,* is *a priori* in a far higher degree than any geometrical principle—that the relations of A to B and of A to C should throw light on the relations of B to C, and our axiom of dimensions is only the special form which this principle takes at the abstract geometrical level.

It is noticeable that the above argument cannot prove the necessity of any particular number of dimensions, and, in particular, cannot prove that there must be more than one dimension. In a space of one dimension, however, as we saw in discussing time, our axiom of Free Mobility would break down. In such a space no figure could be superposed upon any other, and Geometry would be impossible. Hence, also, the measurement of time would be impossible. At the same time, motion would remain possible, unless we adopt the doctrine of the plenum. Nevertheless, the existence of more than one dimension is, I think, an *a priori* condition of any experience in the least resembling our own. For in a world of only one dimension we could perceive only one point, or one object, throughout our whole lifetime, and the knowledge of a varied world of interrelated objects would be impossible. On this ground, I think, we may regard the existence of two or more dimensions as an essential condition of anything worth the name of experience of an external world.

As regards the axiom of the straight line, our argument here may be brief, since it was already deduced above from the relativity of position. Since position is relative, any two points must have *some* relation to each other: since our form of externality is homogeneous, this relation can be kept unchanged while the two points move in the form, *i.e.*, change their relations to other points; hence their relation to each other is an intrinsic relation, independent of their relations to other points. Since our form is merely a complex of relations, a relation of externality must appear in the form, *i.e.*, must be immediately presented, and not a mere inference; hence the

* See Bosanquet's *Logic*, book ii, chap. vii.

intrinsic relation of two points must be a unique figure in our form, *i.e.*, in spatial terms, the straight line joining the two points.

All the above essential axioms, therefore, are deducible from the fundamental properties of any form of externality, or, more generally still, from the mere fact that we have experience of an external world, quite apart from the specific nature of such experience. The special axioms of Euclid, on the contrary, can only be derived from an observation of the special nature of our actual spatial experience, and are therefore, for Geometry, empirical.

Finally, it is interesting to observe that our fundamental postulate, the relativity of position, involves, when we endeavour to study space apart from the matter which it relates, the most glaring contradictions. For, as we have seen, it is only possible to define points by their relations, *i.e.*, by lines, while lines can only be defined by the points they relate. This involves either an infinite regress or a vicious circle, the penalty of our attempt to give thinghood to a mere complex of relations. If this contradiction is inherent in the notion of a form of externality taken in abstraction, it affords no argument against our reasoning, but rather evidence that the difficulties dealt with have been fundamental. To remove the contradiction, we should have to abandon the purely geometrical standpoint, and introduce, to begin with, the notion of matter, as that which is localised in space, as that which is related by spatial relations. With the notion of matter new contradictions are introduced, as is shown by the difficulties of atomism. But these contradictions fall outside the limits of the present paper, and could only be dealt with by a detailed criticism of Physics.

SYMPOSIUM.—ARE CHARACTER AND CIRCUMSTANCES CO-ORDINATE FACTORS IN HUMAN LIFE, OR IS EITHER SUBORDINATE TO THE OTHER ?

I.—By B. BOSANQUET.

THE title pre-supposes an antithesis, and raises some such question as "how far either term of the antithesis can be reduced to the other." No doubt the antithesis, as assumed, is a product of crude theory or popular "common sense," and the question which it raises will solve itself if we succeed in precisely stating the philosophical import of the point of view on which it rests.

Let us take a violently extreme assertion, to begin with, from

Marcus Aurelius. "Things themselves (τὰ πράγματα αὐτὰ) in no sort of way touch the mind, nor have entrance into the mind, nor can turn or move the mind; but it alone turns and moves itself; and it makes the circumstances (πρὸνφεστώτα rather, matters presented to it) accord with the judgments which it demands of itself."* Here the modern thinker will at once rejoin, "But this is an exploded antithesis. What are things which have no entrance into the mind? It is certain that things in the only reality of them which can concern us do enter the mind, and constitute the world which limits and colours its life." The modern moralist, however, is furnished with a reply by the same analysis on which the modern critic relied in attacking the Stoic position. "You may say, in a sense, that the reality of things enters the mind, and even makes up and colours and determines the mind, for feeling and emotion must ultimately *somehow* respond to the stimuli of experience. But this does not annihilate the truth of the Stoic contention. For the "things," or facts, as in a mind, and as working on a mind, are not what we mean by things or facts "themselves." Granted that things "themselves" can only be described in terms which imply intelligence, still, when described as "themselves" they are quite differently thought of, considered in quite different relations, from those they hold as entering into the will and experience of an individual mind. As "themselves" they have a fixed nature, in relation with certain fixed elements which are assumed as the objects of physical or, it may be, of historical or statistical investigation. But as operating "in a mind" the things or facts are subject to a unique kind of reaction from and upon a composite world of experiences, which modify and colour each other in countless ways through attention and apperception, as affected by feeling."

Now in taking this ground we have lost the simplicity of our initial antithesis. We have no longer "things" over against "mind." We have not even the simple-seeming distinction of Plato and Aristotle between "external advantages"—the social and material basis of existence including social distinction—and the moral purpose as held by the individual intellect. The attack—the attempt to resolve character into circumstance—is in the modern world much more extended, as the defence is much more comprehensive. All that is in the mind—the whole mental colour and range of horizon—has its independent history, whether through heredity or through the sources and limitations of experience. Not merely health and wealth, but language, race, religion, birthplace, industry, character of parents, may be then regarded as "circum-

* Ritter and Priller, 472a, *Marcus Antonius Comm.* v. 19.

stances." Each has its history outside the individual mind, and taking them all together, as an aggregate of details, we seem to have that mind in its totality. What is there in it that does not come from somewhere? And of all this that "comes from somewhere," is there anything that is not a "circumstance," that cannot be taken out of the self and regarded as a possible not-self, as given and alien, as one of the "surroundings" from which the inner self, *pro tempore*, might wish to be free? Temper, say, or intellectual bias, just as much as a craving for drink, can be looked upon as circumstances in the pattern of life, in the lot which has fallen to us by the Platonic sortition.

We cannot hope to evade this analysis by exhibiting character, or the true inner self, outside and away from the "circumstances" thus accumulated. Nor can we hope to draw a hard and fast line between some of these facts and relations as our true self or character and others as "outside" us, or as mere "surroundings" or mere "circumstances." Either of these attempts would involve a mistake of principal, which would ultimately land us in a motiveless "inner" self, perhaps, with the late Dr. Carpenter, in relying on the unexplained action of the nerve centre which controls the vaso-motor system.

Our only course is frankly to accept the totality of the self as embodying data which have their independent history. Taking this ground, we are safe in insisting to the utmost on the truth of Marcus Aurelius's position. It is in fact a truism. What the data are in the self is what they are for the self; and what they are for the self depends on the work of self-consciousness in constructing a life and purpose out of them. The self is character, when regarded as an organised whole; it is circumstance when regarded as a congeries of details. But in proportion as any factor of experience, of the world of the self, occupies the position of a clue or plan, of a predominant purpose, in short, of a determinant of the whole, it partakes more of the nature of character and less of the nature of circumstance. And further, because details are relative to their setting—to the whole in which they are incorporated—a truth which has long been preached, but which only one or two great thinkers have realised—the more fragmentary data can be transfigured and re-moulded by the influence of dominant ideas. Here we find the true justification—not, indeed, of an "inner" self, undetermined by "outer" circumstance, but of a higher or larger self—relatively speaking, character—capable of re-acting to an extent which the philosopher under-estimates rather than over-estimates, on the lower or less organised self—relatively speaking, circumstance. And we find that Aristotle's view of material goods as *sine quibus non*, gives them in one sense far too

independent a position, though sane and just in confining them to the rank of means as opposed to ends. Though for life, as a whole, they are *sine quibus non*, yet, for the reason above stated, they have, by themselves, no power to promote the larger life of character, while it, relatively by itself—i.e., mere existence being secured—has the power to promote them. In other words, though conditions of life, they are not self-subsistent conditions, and they are incorrectly estimated if considered as a sort of foundation on which character can be built up, or as a half-way house on the journey towards it.

The points of view, then, from which the self may be regarded as Character and as Circumstance respectively, may each of them be applied throughout the whole of the content of the self; and it would be a mistake of principle to deny that circumstances in any sense bear upon character. But the point of view of character is the true point of view, and, strictly speaking, circumstance bears upon character not as *mere* circumstance, but only as involved in that relation to the whole which is taken account of in the point of view of character; and by being involved in this relativity circumstance undergoes a transformation which is not formal, but actual, and altogether revolutionises its nature and reactions. The above account applies to all that is important in circumstances outside consciousness, as poison or disease. Their moral importance turns on the degree in which they succeed in influencing the larger elements of the conscious self.

II.—By E. E. C. JONES.

The question with which we here have to deal is, Mr. Bosanquet says, "How far can either term of the antithesis be reduced to the other?" and this question he answers by a thoroughgoing identification of character and circumstance. "The self," he says, "is character when regarded as an organised whole; it is circumstance when regarded as a congeries of details."

It must indeed be admitted that, taking any life as a whole, it is very difficult to draw the line between character and circumstance. In an analogous way, it is very difficult to draw the line between an organised body and the food and air by means of which it has grown and subsisted. Indeed, everywhere it is difficult to draw sharp and clear distinctions, because of the unity or continuity or interaction of those factors of the whole universe which we distinguish from one another as *things*. This unity is the aspect of experience which we are perhaps in danger of taking too little into account. Variety and change is presented to us at every turn, and

can never be ignored or forgotten. But that we cannot have variety without unity becomes apparent whenever we try to draw sharp lines of demarcation and to apply them in experience.

However, at any given stage in a human life it does seem sufficiently possible to distinguish between character and circumstance. Nothing, it is true, would be what it is, unless the rest of the world were, and had been, what it is. Any one's character—that developed nature in him, in virtue of which he voluntarily reacts in a special way to the stimuli that reach him—is in part the result of past “circumstances” or stimuli. But unless each thing *had* a nature of its own, there could be neither character nor circumstance—it is only a definite special nature that can be affected in a given way by given “circumstances”—that is, by the nature of other things and their position in reference to it.

If this is so, I do not see how we reach such a simple and absolute identification of content in character and circumstance as Mr. Bosanquet seems to suggest when he says that “the self *is* character when regarded as an organised whole; it *is* circumstance when regarded as a congeries of details.” Perhaps, however, this is not intended simply and literally, for he goes on to observe that “the point of view of character is the true point of view; and, strictly speaking, circumstance bears upon character not as *mere* circumstance, but only as involved in that relation to the whole which is taken account of in the point of view of character.”

This statement seems to supply an answer to the question with which the discussion started, viz., “Are character and circumstance co-ordinate factors in human life, or, is either subordinate to the other?” the answer given being to the effect that circumstance is subordinate to character—that is, character has more power to mould circumstance than circumstance has to mould character.

I quite admit that the effect of circumstance in any human life is strictly dependent on character; but since character can only re-act to circumstances, and must, if definite, re-act differently to different circumstances, it would seem that the action in which character manifests itself is as dependent on circumstances as on character. And when it is argued (as I understand Mr. Bosanquet to argue in another place*) that “partial and discontinuous employment is the poison that corrupts the lives” of the Industrial Residuum, or that a person can be “morally murdered” by injudicious benevolence, it seems to me that the importance of circumstance as affecting character is very strikingly brought out. If in answer to this it is said that by character is meant “the operation of ideas in life,”

* *Aspects of the Social Problem*, pp. 113, 114, and 117.

and that it is such an operation of ideas that is here referred to, then I would ask what has become of Circumstance? For no circumstance can operate in life, or touch Character, if it does not reach consciousness—that is to say, if it does not affect ideas. If any change in the environment of any human being could be *merely material*, it could not affect that being regarded as human. And changes of environment that do reach consciousness and affect ideas are what they are, and are of importance only in co-operation with character. *Mere* change of environment would be nothing, but change that touches consciousness is of enormous importance, as seems to be generally recognised in all schemes for educational or social reform. The mistake would lie, not in attributing importance to circumstance, but in failing to see either (1) that circumstance acts on character, through consciousness, or (2) that the interaction between circumstance and character is throughout reciprocal. We see only too abundantly that good material conditions are not enough to make people good or happy. And it may be quite true that to merely feed people well, and clothe and house them well, is not so important for the well-being of their life as to make them true and honest and industrious and self-controlled; but, on the one hand, can they become industrious and good unless they have sufficient food and care to keep them in at least tolerable health and working order? And, on the other hand, if they are good and hard-working, will they not be likely to secure for themselves adequate food and so forth?

Perhaps the utmost that can be admitted is, that average circumstances, with character above the average, is on the whole a more desirable combination than average character with better than average circumstances, and that, generally, character seems perhaps less liable to rapid change than circumstances; but desperately disadvantageous circumstances, *while they last*, may make a case as hopeless as a desperately disadvantageous character. And it must not be forgotten that for any one of us "Circumstance" includes the character of others, and that among the disadvantages of circumstances may be their deteriorating effect on the character with which they are in interaction.

III.—By WILLIAM L. GILDEA.

I cannot tell at first sight what is meant by "character" in our title. It is distinguished from "human life," and is declared to co-operate with "circumstance" in the production of "human life." I suppose that I am not wrong in considering that "human life" is contemplated in the title as a product of "character" and "circum-

stance." The title certainly assumes that "character" and "circumstance" are factors. The only question is whether as factors they are co-ordinate, or one is subordinate to the other. Now they cannot be factors with their efficacy suspended in mid-air. They must, if they be factors at all, be factors of something. They must, then, be contemplated as factors of "human life." But, if this be the case, what is the significance of "human life" in our title? We must exclude from "human life," precisely considered, all that comes under the head of "character"; for "human life" is given to be, in part, the effect of "character." We must exclude from "human life" all that comes under the head of "circumstance"; for "human life" is given to be, in part, the effect of "circumstance." What, then, is this "human life" which is the effect of "character" and "circumstance"? I think it must be what I myself should call character. This, then, for me is the meaning of "human life" in the present discussion—character, the man, the man made what he is by his habits. If this be "human life," what meaning am I to attach to "character"? "Character" here may mean one or other of two things. It may mean the peculiar tendencies which come to one by nature. These can hardly be called "circumstances," since they enter into a man's composition; and they may be called character, since they involve a permanent, or quasi-permanent, bias towards a definite course of conduct, and this is an essential note of character; or it may mean the free will. I prefer to take "character" here as signifying the free will. I find myself constrained to do so. I must make room for the free will, and there is room here or nowhere. With me, when I am left to define for myself, character means what I am supposing is meant in the title by "human life"—the man in his permanent or quasi-permanent relation to his surroundings; and man so considered is, in my belief, man as self-made, and man is self-made by the action of his free will.

In a short symposium paper I cannot account for my belief. I can do little more than state my belief. This, then, is my belief. Every man has by nature certain tendencies inclining him strongly to definite courses of action. Of these tendencies some are common to the race, others are peculiar to the individual. These tendencies if unchecked will infallibly be realised, at least in deliberate desire. In addition to tendency circumstance has to be considered. It may, I think, be said of circumstance that it has no original force whatever. Unless there is a tendency to which it can appeal circumstance must remain inoperative. If this be so, how do we account for acquired tendency? A man has lived temperately for many years. He has shown no tendency towards intemperance. He has possessed no such tendency. But circumstance begins to favour intemperance. The

man becomes a drunkard and remains one. Is not circumstance originating here? No. The definite tendency towards temperance is acquired; but this definite tendency supposes and merely modifies a general tendency to ease and self-indulgence that is native and original. Circumstance, then, has no force except as it appeals to tendency. Does circumstance, so considered, appeal of necessity successfully? Is the man, as he is, with his deliberate thoughts, with his deliberately formed, deliberately carried out courses of conduct the inevitable outcome of tendency acted on by circumstance? In my belief most decidedly not. There will be, indeed, certain spontaneous and impulsive efforts on his part which result of necessity from circumstance acting on tendency. But where there is deliberation—where there is, as is often the case, a balancing of the *pros* and *cons.* of a definite course of action, there no necessity can be found. The course of action if adopted is adopted freely. If a man persist in the deliberate choice of a course of good conduct, he is a man of good character. If he persist in the deliberate choice of a course of evil conduct, he is a man of evil character. But, in every case, he is the character, he is the man that his free will has made him. The free will is, in my belief, the great factor in human life. Let no one suppose that the will is a motiveless factor. Its motive is found in the last practical judgment of the intellect. This view is, I think, accepted, perhaps unconsciously, by all. "What are you going to do?" is a frequent question. "I have not made up my *mind* yet," is a frequent answer to the question. But though the will invariably decides in accordance with the last practical judgment of the intellect, still just as invariably does it decide freely. That any practical judgment should be the *last* is itself the work of will. The will can always require of the intellect that it should balance anew the *pros* and *cons.*; it can even bias the intellect in its work of balancing. This view also seems to be commonly accepted. "He cannot see it," says one. "He *will* not see it," is the immediate comment of another. If we dislike a man we may view with prejudice all that he does. Sometimes we are aware that we are influenced by prejudice. And even when we are not thus aware we can decide to judge them more charitably and to act upon our kindlier interpretation. I have not established my belief, but I have, I trust, sufficiently indicated it for the purpose of discussion. It is a pleasure to me to think that, unless I have misread him, I am in substantial agreement with our President. "What the data are," he writes, "in the self, is what they are for the self; and what they are for the self depends on the work of self-consciousness in constructing a life and purpose out of them." This sentence seems to me to be a primary one upon our question. And I entirely accept it.

IV.—By ALEXANDER F. SHAND.

Perhaps it will make the discussion of this difficult question clearer and less ambiguous if we ask, at the outset, whether we are to consider it from the metaphysical, the ethical, or the psychological point of view. The character whose relation to circumstance we are invited to consider is the character of individual persons, not that which distinguishes them one from another, but that universal character, that identical human nature which they have in common. Now, there is no doubt that the plain man, as he is sometimes called, thinks of his circumstances as existing independently of his individual consciousness of them. Yet, at the same time, he regards them as *his* circumstances, and as intimately related to him. What is occurring at the antipodes he does not regard as his circumstances, except, again, so far as they become indirectly his and affect him. He holds that his circumstances both affect him and that he reciprocally affects them, and we may sum up and interpret his complex mental attitude as both insisting on the independent *existence* of circumstances and their modifying and modifiable *character*. Now, this mental attitude of the individual is a psychological fact, the genesis and outcome of which psychology may be called upon to explain. But if we pass beyond this subjective point of view, if we ask whether this mental attitude is justified, whether the judgment it contains is true or valid, then we pass from psychology to metaphysics. We are then considering the relation of the individual mind to the world—at least, to those events in the larger whole which affect it—and this relation, whether interpreted in this way or that, psychology may assume as a hypothesis, but, being an empirical science, it can never demonstrate as a metaphysical truth.

Now, if we take, in the first place, the psychological point of view, what conclusion shall we reach as to the relation of character and circumstance? * To be the circumstance of this particular man, to be his and not another's, it must affect him. To affect him, it must be experienced or at least thought of. For if the circumstance affects only his body, and if the chemical and molecular changes which it there sets up have no psychical counterpart, produce no modification of his experience and thought, then the circumstance does not affect his character, and there is no relation between them. From the psychological point of view a circumstance which is not experienced or known is nothing, and has no concern for our science. But if we take character to mean the whole mind of the individual in

* I have treated this more fully in *Mind*, N S., vol. v., pp. 210, 211.

feelings of pleasure and pain, in thought and volition, then circumstance as experienced and thought of is already contained within the character and forms part of it. Thus we reach and justify the President's conclusion, that the relation between them is the relation of the detail to the whole in which it is organised. And the detail is, of course, subordinate to the whole, and not co-ordinate with it as another whole might be.

But this term "subordinate" may suggest a different meaning, and Miss Jones has taken this different meaning. Here the question is, as Miss Jones expresses it, which has "the more power," character or circumstance? and she concludes that character has the more power, and subordinates circumstances. But from the psychological point of view, and holding to the same meaning of character, we shall see that we can neither give the answer which she gives, nor the contrary one. Common sense often gives this contrary answer, and what it means is that circumstance—say the experience of a great temptation—may have such force that the *moral* character cannot withstand it. Here we are interpreting character in a narrower sense. The moral character is overthrown, but not by circumstance alone, but by circumstance in conjunction with character. If the experience had not been a temptation for the individual in question, that experience would not have overcome him. But what constitutes it a temptation for him? Why, that it appeals to his love of pleasure, or wealth, or power, and being assimilated by this systematised body of thought and tendency, this organised whole or sub-character conquers that other organised whole which he names his moral character.

We have, then, seen that, in a psychological sense, circumstance is to character as the detail is to the whole in which it is organised, and that in a proper sense it is subordinate to character, but that it can neither be judged stronger or weaker, because it overcomes, or is overcome by, one part of the character only by the aid and conjunction of another part.

I now pass to the metaphysical aspect of the question. The individual thinks of his circumstances as more than his experience or representation of them. And we cannot deny the essential validity of his thought unless we are content to accept Solipsism. If, then, he is right in regarding himself as part of a greater whole with which he is intimately related, how can he be wrong in regarding those occurrences in this world which he names Circumstances as only in appearance and in part contained within his consciousness? So far from circumstances being subordinate to his character in the sense of being organised within it, the truth rather is that character and circumstance are both co-ordinated within the greater whole of

the universe, and if, like the physiologist, we interpret mind in terms of visual perception, the brain and nervous system, on the one hand, and the stimuli, or circumstances which affect them, on the other, must be co-ordinated in the world at large.

We have so far taken character as the entire mind of the individual in feeling, thought, and will; but Dr. Gildea has selected another of the meanings implicit in the current use of the term. We often mean the moral character; and this true or deepest self emanates from the will, not as mere conation, but as rational choice between good and evil. Thus we reach Dr. Gildea's conclusion that Character is the man so far as "self-made by the action of his free-will." But character in this narrower sense will be interfused with character in the broad sense, as including all that is in a man. A fragment of a man's virtues and vices, a few of his habits, those comparatively rare conations where there is a possibility of free-choice, will constitute his character. But the relation between this sub-character and its circumstances will be the same as when we are dealing with the entire man; and so Dr. Gildea is able to endorse the President's conclusion that circumstance is subordinate to character.
